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References: 1. Schreiner, G. E.: A.M.A. Arch. Int. M. **102**:32, 1958. 2. Freedman, L. R., and Beeson, P. B.: Yale J. Biol. & Med. **30**:406, 1958. 3. Rocha, H., et al.: Yale J. Biol. & Med. **30**:341, 1958.

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Formula Diets Are Not Medically Sound

The use of complete formula diets is not a medically sound means of reducing weight, an official of the American Medical Association has said.

Philip L. White, Sc.D., secretary of the A.M.A.'s Council on Foods and Nutrition, said, "Selecting a variety of foods and controlling calorie intake to maintain the most desirable weight is the only long-term technique that has sound medical judgment behind it."

The better-grade formula diets "seem to be nutritionally complete with the exception of caloric content," he said. Most of the products are designed to supply 900 calories daily, he said.

However, Dr. White said, "no weight-reduction program should be undertaken by any individual who is grossly overweight unless the program is carried out under medical supervision."

Only the physician is properly equipped to judge whether an overweight person should in fact reduce, he said.

"The short-term use of the 900-calorie formulas will not harm the individual who is just a teeny bit overweight," he explained. "However, such persons will achieve more satisfactory long-term results when

(Continued on Page 16)

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Open Wringers Persist As Child Hazard

Washing machines with power-driven open wringers are a continuing hazard to children, according to an article in the Oct. 1 *Journal of the American Medical Association.*

During the six-year period ended Jan. 1, 1960, 423 children were admitted to Children's hospital, Louisville, Ky., for treatment of wringer injuries, Drs. Hugh B. Lynn and Richard C. Reed reported.

"The labor-saving device known as the washing machine with its hazardous, power-driven open wringer, has introduced the modern parent to horrors quite unknown to the primitive woman whose washday chores consisted of pounding the wash out by hand," they said.

"Despite tremendous advances in design and production of the completely automatic washer-dryer combination, many nonautomatic machines with power-driven open wringers are in use and are still being manufactured.

"It is not just the regular Monday washday that offers this hazard. Youngsters aged 2 to 6 years (the period in which these injuries most commonly occur) are apt to be house-bound and bored during bad weather on any day and at any time of the year. The fascinating rollers offer a new interest to the inquisitive child."

There is a great variation in the amount of damage a wringer can cause, the authors said. However, they said, it appears that the quicker the motor is stopped, the quicker the compression is removed and the less the damage.

"By all odds, the best treatment is preventive," they concluded. "Prevention implies an effort to perfect safeguards on electric washing machines and the education of parents to the hazards of the wringer."

The A.M.A. department of health education makes these suggestions for preventing such accidents:

—Begin a child's safety education at the age of two by using forethought and example.

—Be sure the wringer has a safety release.

—Unplug the washing machine when it is not in use and keep the cord out of reach of the children.

—Keep young children away from the washing machine when it is in use.

—Never leave a young child alone in the house, not even for a few minutes.

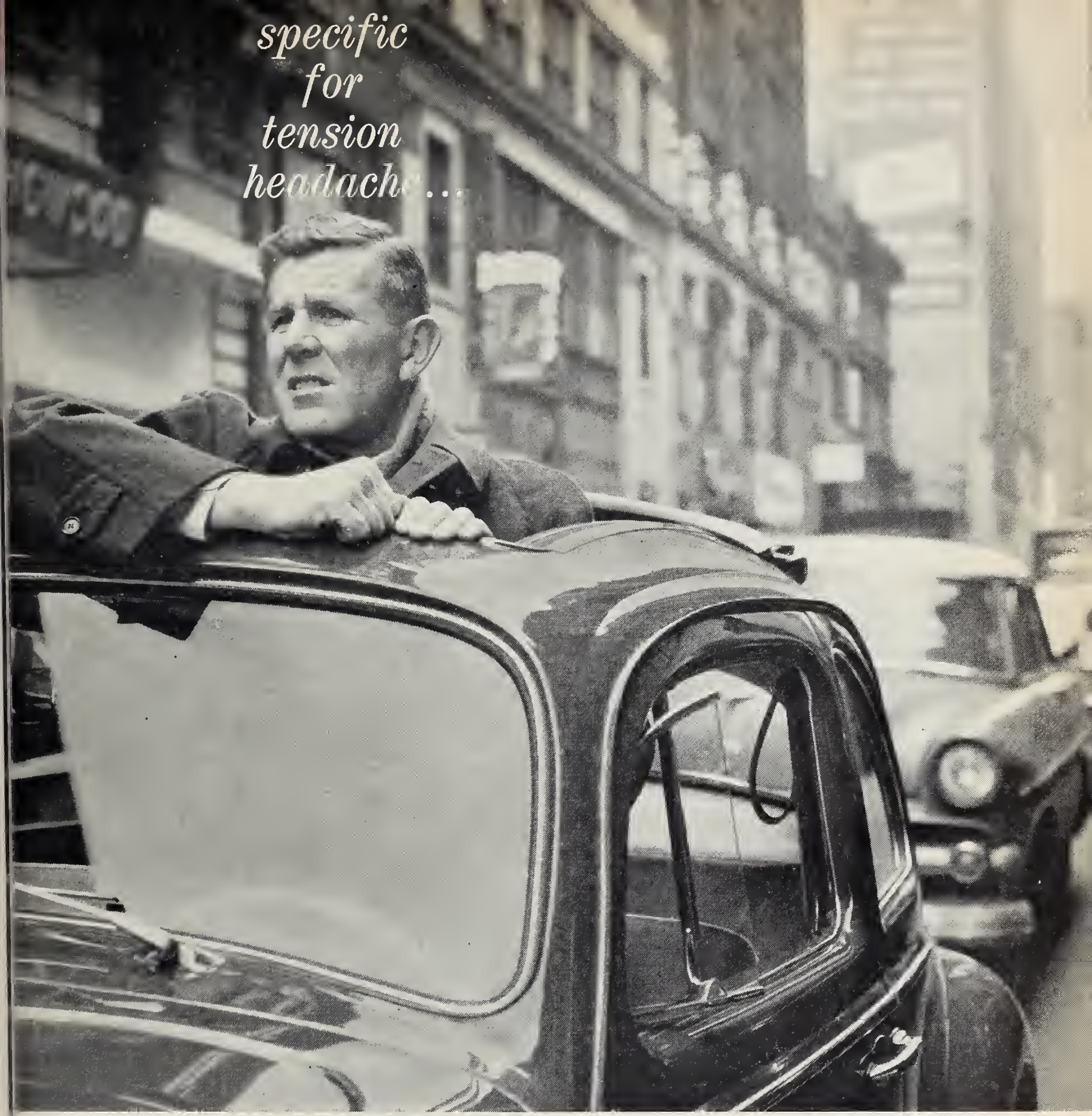
Formula Diets Are Not Medically Sound

(Continued from Page 12)

they develop and maintain good eating habits—then weight maintenance will no longer be a problem."

Dr. White said he did not believe that "any crash diet program has a respectable place in good family nutrition."

His comments are contained in the November issue of the A.M.A. magazine *Today's Health.*



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Friedman, A. P., and Merritt, H. H.: J.A.M.A. *163*:1111 (Mar. 30) 1957.

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SANDOZ

A.M.A. Launches New Campaign to Help Public Cut Health Care Cost

The American Medical Association has announced that it is launching a "comprehensive study and action program" to guide the consumer in spending his health care dollars more wisely.

The *AMA News,* the newspaper of the medical profession, said editorially that "the program, dedicated to promoting the highest quality health care at the lowest cost, can help the consumer dramatically reduce his expenditures on health care without lowering the quality or effectiveness of it one bit."

Purpose of the campaign, part of a program announced earlier this year with the appointment of an American Medical Association Commission on Medical Care Costs, is to arm the consumer with facts in the hope that he will use them.

Purpose of the new commission on costs, the A.M.A. said, is "to find answers to the many questions being raised about medical care costs and to present the findings frankly and forthrightly to the medical profession and to the public."

Commission chairman, Dr. Louis M. Orr, Orlando, Fla., summarized the commission's attitude when he said:

"I do not think there should be any 'sacred cows' in medical practice, or in hospitalization, when it comes to providing medical care and services. We seek the best quality, the most quantity at the lowest possible costs. Any barrier that stands in the way of this objective should be removed—immediately."

One of these barriers is the ineffectiveness of a vast number of non-prescription or over-the-counter drug products which the A.M.A. says is currently being used by the public in great quantities and at a cost running into millions of dollars annually.

The A.M.A. called upon the nation's physicians to alert the public, their patients, to the latent dangers involved in self-prescribing some of these products.

The American Medical Association said physicians also owe it to their patients to discourage them from "throwing their money out the window" on

(Continued on Page 33)

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REFER TO PDR Page 669

A.M.A. Launches New Campaign to Help Public Cut Health Care Cost

(Continued from Page 32)

devices, so-called "cures," food fads, "health literature," and many other forms of quackery currently bilking the American public out of additional millions of dollars a year.

The *American Medical Association News* editorial said in part:

"The quackery, food-faddism phase of the program is a continuation of a concerted, nationwide campaign against door-to-door peddlers, self-styled health and nutrition experts, and manufacturers of useless devices and gadgets being promoted as 'cure-alls' for everything ranging from 'that tired feeling' to arthritis and cancer.

"Physicians are being asked to tell their patients the truth about vitamins, rheumatism, and arthritis remedies and other products being bought by the public and which are essentially worthless in terms of preserving health, relieving pain and suffering, and knocking out disease.

"After a three-year study on vitamin preparations, American Medical Association's Council on Foods and Nutrition said that if a healthy individual's diet contains the key food groups in sufficient amounts, nutritional supplementation is unnecessary. The council also believes the vast majority of people now using self-prescribed vitamins are enjoying that diet and that much of the estimated $350 million a year the public spends on vitamins could better be spent on food.

"Americans spent more than $148 million for laxatives and elimination aids in 1958, and at least 100 million persons have become addicted to unnatural elimination aids, Dr. Charles W. Hock, Augusta, Ga., wrote in the current issue of *Today's Health*. He warned of the dangers of self-medication and said the public should be advised 'to leave their digestive and elimination systems alone.'

"More than $68,000,000 is spent annually on aspirins and much of this expenditure also is unnecessary.

"Arthritis and rheumatism patients are spending over $250 million a year on uranium-ore pads, super aspirin, alcohol and herb roots, and other nostrums and devices offered with misleadingly implied benefits. Many of these products are outright quackery. Yet it is estimated that one out of every two arthritis victims still listens to these charlatans, buys their products, and wastes his money. . . .

"The average American family now spends about $18 a month on non-prescription or over-the-counter products. While these drugs are safe for unsupervised use in most cases, many of them actually bring little benefit from a health standpoint and, for the most part, represent dollars wasted.

"The goal of the American Medical Association program is a higher quality of health care for a greater number of people at a lower cost."

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Salk Vaccine More Effective With DTP Shot

Salk polio vaccine has been found to be more effective when given with diphtheria, tetanus, and pertussis vaccines in a combined injection.

A study of the polio-diphtheria-tetanus-pertussis vaccine (Compligen) was reported by researchers at Pitman-Moore Co., Division of Allied Laboratories, Zionsville, Ind., in the October 29 issue of the *Journal of the American Medical Association.*

The study involved 192 children, ranging in age from one month to six years. It was designed to determine the merits of combining the polio shot with the successfully tested diphtheria-tetanus-pertussis (DTP) shot.

The polio antibody response, i.e., the bodily resistance built up by the vaccine, was "significantly greater" with the combined vaccine than with the Salk vaccine alone, the authors said.

The diphtheria antibody response to the combined vaccine also was "significantly higher" than it was to the DTP vaccine, they said.

However, the tetanus and pertussis responses were "essentially the same" to both the DTP and the polio-DTP vaccines, they added.

The children were given a course of vaccinations consisting of three injections at approximately one-month intervals, the authors explained. This sched-

(Continued on Page 60)

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Volume 94 JANUARY 1961 Number 1

Portacaval Shunt in Patients with Cirrhosis

After-Effects of the Operation

JOHN A. BENSON, JR., *M.D.*, Portland, Oregon

• The subject of the indications for operation for portacaval shunt bristles with problems to which a satisfactory answer cannot yet be given. I have discussed those events which supervene after a portacaval shunt which, in the present state of knowledge, has been directed as proper and well-intentioned therapy. It is against the knowledge of such post-shunt events and the complexity of their management, as well as the success of the operation and the risk of mortality, that one must balance the indications for surgery. This is particularly pertinent to the application of prophylactic shunt surgery now under consideration.

Before discussing some of the empirical results in patients with chronic liver disease upon whom such shunting operation has been performed, I would like to enumerate some of the physiologic events which can be expected. If one creates in dogs a side-to-side anastomosis between the portal vein and the inferior vena cava below the liver (Figure 1A), the only impaired function which can be measured is that of regeneration of liver tissue after partial hepatectomy. If one then ligates the portal vein on the liver's side of the portacaval anastomosis (Figure 1B), thereby creating an Eck fistula, further changes ensue. (Such an Eck fistula is duplicated in humans, incidentally, by a standard end-to-side anastomosis (Figure 1C) between the portal vein and the inferior vena cava.) Animals that have had these operations undergo gradual atrophy of the liver. After some delay a progressive episodic stuporous condition, which has been called "meat intoxication," begins. This occurs whether or not meat is present in the diet and seems to be more clearly related to constipating diets. Protection of such dogs from the "meat intoxication" of an Eck fistula can be afforded by gradual occlusion of the portal vein below the fistula (Figure 1D). Complete recovery from the symptoms of Eck fistula is also effected if the vena cava above the portacaval anastomosis is occluded (Figure 1E). Bollman[2] speculated that the common denominator here is prevention of pulse waves from the right heart down through the anastomosis and portal system to the intestines.

Portacaval anastomosis halves the blood flow through the liver of animals.[3] Perhaps because the terminal parenchyma along the vascular system is quite hypoxic, tests of liver function show impairment after portacaval anastomosis. For example, the by-passed liver can then clear only one-third as much bromsulphalein each minute as the liver of a normal animal can. Furthermore, there is a decreased output of glucose by the liver after stimulation with insulin. Whipple,[14] using Eck fistula preparations, found that production of bile salts was

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From the Gastroenterology Division, Department of Medicine, University of Oregon Medical School, Portland, Oregon.

Presented at a medical symposium on diseases of the abdomen, dedicated to the late Albert M. Snell, M.D., at the Palo Alto Medical Clinic, April 23, 1960.

Submitted June 29, 1960.

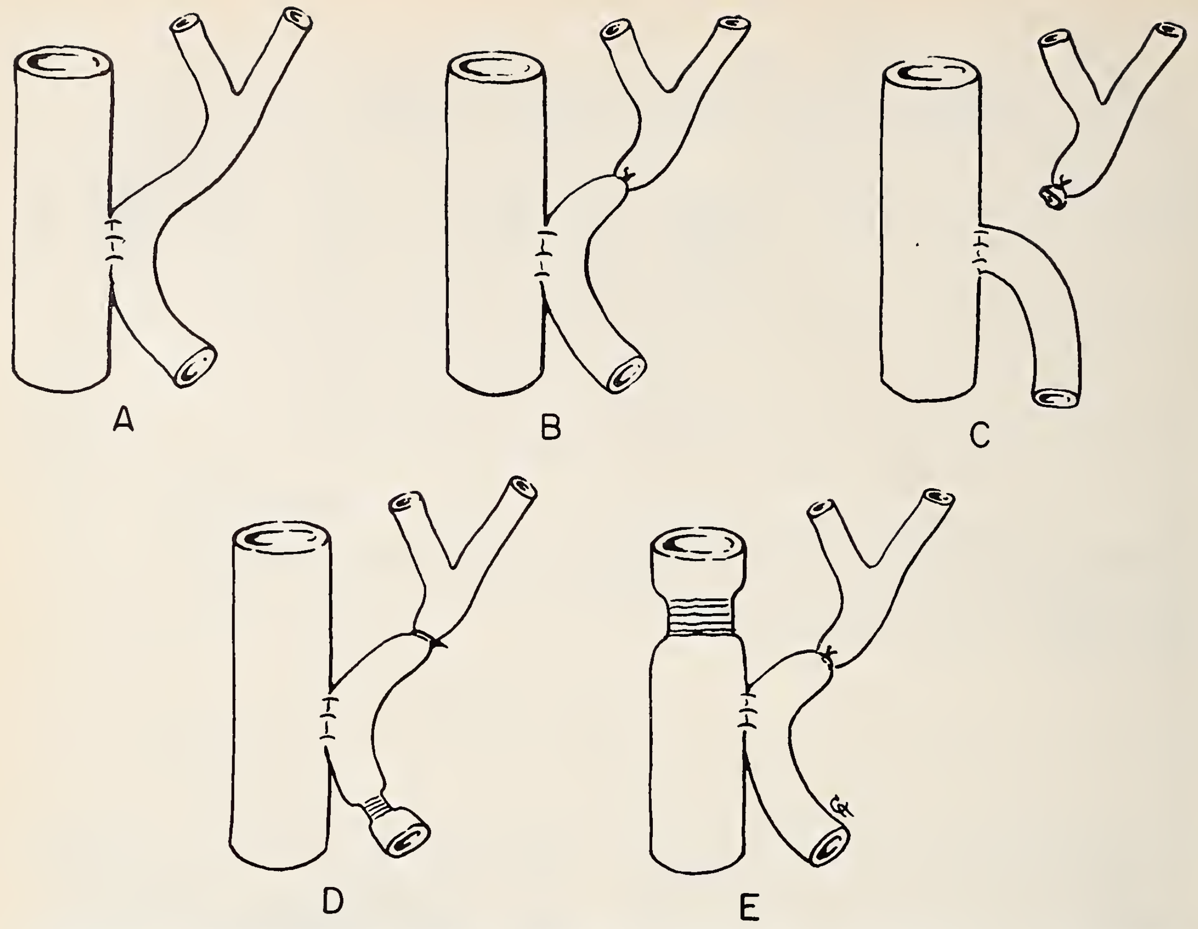

Figure 1.—Various placements for portacaval anastomosis, the inferior vena cava just below the liver always appearing on the left: *A.* Side-to-side portacaval shunt. *B.* Side-to-side portacaval shunt with ligation of portal vein above the shunt, or an Eck fistula. *C.* End-to-side portacaval shunt. *D.* Eck fistula with occlusion of portal vein below the shunt by cellophane stricture. *E.* Eck fistula with occlusion of the inferior vena cava above the shunt by cellophane stricture.

less than normal. There also were periods of a definite incapacity to utilize dietary protein in the formation of new hemoglobin and plasma proteins, and the utilization of ingested iron toward correction of a nutritional anemia was less efficient.

In dogs the ability of the remaining normal liver to regenerate after partial hepatectomy or injury by carbon tetrachloride is impaired by a portacaval anastomosis. Repair after partial hepatectomy is better if portacaval transposition is performed instead. Such a transposition perfuses the liver through the portal vein with caval blood from the kidneys and lower extremities. Liver regeneration is also improved by arterialization of the hepatic stub of the portal vein in an animal with an end-to-side portacaval shunt.[8] Such animals with total arterialization of the liver maintain body weight, have a greater survival and do not develop "meat intoxication," in contrast to those with Eck fistula. Thus it would seem that the ability of the liver to regenerate depends in part on adequate flow of blood through it.

The condition referred to as "meat intoxication" deserves further comment. In dogs, such episodic stuporous states have been observed with non-specific changes in electroencephalograms and eventually elevations of the blood ammonia. The episodes of intoxication occur at an accelerating pace, despite the administration of oxytetracycline or neomycin by mouth and irrespective of a limited oral intake of protein, until the animals die in 12 weeks or so, emaciated and comatose. Their brains show increased numbers of protoplasmic astrocytes.

DIFFERENCES IN EXPERIENCE IN HUMANS

In considering the relationship of the foregoing facts to corresponding conditions in human beings, it must be borne in mind that in humans we are dealing not with a normal liver or hepatic circulation, but with one affected by chronic disease. End-to-side portacaval shunt in a human with cirrhosis of the liver is not regularly attended by either episodic stupor or relentless deterioration to early death. This difference deserves emphasis. There are at least two possible reasons why a human with cirrhosis does better than a dog with an Eck fistula. First, the dog that has also had an occlusion of the portal vein (Figure 1D) with development of adequate collaterals, is protected from "meat intoxication" and death. A corollary of this exists in the human who before a shunting operation has acquired spontaneous collaterals. Second, the regenerated nodule of the cirrhotic liver is perfused, not by the portal vein, but by branches of the hepatic artery. Therefore, sudden diversion of portal venous blood through a surgical shunt does not suddenly deprive regenerated liver of its principal blood supply.

The main effects of the portacaval anastomosis are, to my mind, beneficial. In this field there have been no universally acceptable, controlled series that clearly delineate the value, or worthlessness, of venous shunts in the reduction of bleeding from esophageal varices. Because it seems that a reasonably safe and feasible operation might reduce the horrible toll of such bleeding in some patients, and because we cannot comfortably deprive patients of this hope, portacaval shunts will probably continue to be done without proper statistical validation.

SURVIVAL

The overall mortality rate of elective shunting operations in the hands of interested and expert surgeons is now around 10 to 15 per cent. Statistically, if a group of patients with cirrhosis, in whom varices are diagnosed before bleeding begins, were observed for only two years, 80 per cent might be expected to die in that time. Although many of the deaths would not be caused directly by exsanguination, at least 10 to 15 per cent of patients having cirrhosis and varices may be expected to die eventually from their first hemorrhage.[1] About 75 per cent of patients with esophageal varices that have bled once may be expected to die within one year of the first hemorrhage, a figure which has not changed in the past 20 years. Bleeding therefore greatly lessens the predicted survival. On the other hand, of a series of patients at Massachusetts General Hospital who had a shunting procedure because of esophageal bleeding, only about one-third died within two years.[6] The mortality rate associated with splenorenal shunts was lower than with portacaval shunts, perhaps because of the greater incidence of postoperative liver failure after the latter procedure. The first year or two is the most critical period. Patients with varices known to have been present for at least two years without bleeding have a relatively good survival rate and the same is true of those who live for over two years after a shunting operation. The longer the patient survives, the less important liver disease becomes as a cause of death. In one series only about 12 per cent died of hepatic failure.

BLEEDING AFTER SHUNT OPERATIONS

There should be no further gastrointestinal bleeding after a shunting operation. In Child's series,[5] hemorrhage recurred only when the portal venous pressure had not been adequately reduced. Nevertheless, various series show recurrent bleeding in 14 to 31.5 per cent of cases. It is generally conceded to be more common after splenorenal than after portacaval shunts. Linton[6] reported esophageal bleeding in 17 per cent of patients with splenorenal shunts and in only 3 per cent of patients with portacaval anastomosis, although only 2 per cent died of bleeding. Recurring bleeding is not necessarily a sign of portal hypertension or of closure of the anastomosis. Abdominal wall collateral veins should disappear along with any venous hums which might have been present. Esophageal varices, as visualized by barium swallow, generally disappear in patients with satisfactory decrease in portal pressure. The disappearance may take from three to six months. Their presence does not necessarily signify portal hypertension, but if the x-ray films show residual varices beyond six months after operation, the effectiveness of the operation may be questioned.

LIVER FUNCTION

Even in persons without liver disease, laboratory tests of liver function become mildly abnormal after such minor operations as herniorrhaphy or vein stripping and somewhat more abnormal after major upper abdominal operations such as gastrectomy. If the patient has cirrhosis, this immediate deterioration in results of standard tests of liver function is more severe. The changes include a fall in serum albumin and rises in serum bilirubin, alkaline phosphatase and bromsulphalein retention. Usually within ten to fourteen days the values have reverted to preoperative levels. In patients with chronic liver disease there is apparently no greater deterioration after portacaval shunt than after operations of comparable severity in the upper abdomen. The changes in liver function tests are probably related more to the preoperative state of liver function than to the operation itself. In patients who survive the operation there is no significant worsening in results of tests of liver function over the ensuing five years. The test values, moreover, have not been helpful in predicting the well-being of the patient. Indeed, many a patient who feels vastly better after operation has distressingly abnormal results of liver function tests.

EFFECTS OF SPLENECTOMY

The relief of portal hypertension by portacaval shunt is usually attended by decrease in size of the spleen. However, there is no consistent improvement in the granulocytopenia or thrombocytopenia that is associated with congestion of the spleen. There are isolated examples of improvement in hypersplenism, even when the spleen has been left in after a portacaval shunt. But the majority of investigators agree with MacPherson[7] that such improvment is unusual without splenectomy. MacPherson noted evidence of improved resistance to repeated respiratory tract infections in three such patients following the addition of splenectomy. The splenorenal shunt is, of course, preferred by some observers because of the splenectomy which it entails, removing both the splenic arterial inflow into the portal system and the short gastric veins which feed into esophageal varices. Splenectomy has been attended by only a 7 per cent incidence of thrombosis extending into the splenic and portal veins, an incidence no higher than that in persons with hepatic cirrhosis who are not operated on. Splenectomy does not usually alleviate the Coombs negative reduction in erythrocyte survival observed in some persons with cirrhosis of the liver.

CHANGES IN PORTAL PRESSURE

Usually when thrombosis closes the lumen at the site of anastomosis, the event occurs in the immediate postoperative period. The complication is commoner after splenorenal anastomosis and side-to-side portacaval shunt. If this occurs, or if the shunt has not been effective in reducing the portal venous pressure below 30 cm. of water or so, the operation may be considered a failure, whatever happens to the patient. But usually this pressure is not accurately known. It may be determined, if desired, by recording the splenic pulp pressure percutaneously in patients who have had portacaval shunt or the wedged hepatic venous pressure in cirrhotic patients who have had splenectomy.

Before a surgical shunt is created, the portal venous pressure is highest in persons in whom the greatest number of spontaneously induced collaterals have formed. Therefore the latter are not effective ordinarily in decompressing the portal hypertension. Furthermore, the portal venous pressure is higher in patients with varices that bleed than in those with varices that have not bled. So it seems desirable to reduce portal venous pressure. Following portacaval shunt, Rousselot[11] obtained an average fall of 22 cm. of water to a final pressure of 22 cm. The decrease after splenorenal anastomosis was somewhat less, the average reduction having been 15 cm. of water to a final pressure of 24 cm. Reynolds[10] observed a fall in both the portal venous pressure and in the wedged hepatic venous pressure. Sherlock[12] reported a decrease in the splenic pulp pressure. But the pressures were not reduced to normal, and therefore the hepatic vascular resistance at the post-sinusoidal level was maintained.

FALL IN LIVER BLOOD FLOW

There is also a fall in the estimated hepatic blood flow after venous shunt operations. After splenorenal shunt, this decrease is of the order of 25 per cent, whereas after portacaval anastomosis it is about 40 per cent.[10,12] This amounts to a reduction of around 700 ml. per minute in flow of blood after portacaval shunts. While this represents a respectable decrease in blood flow, it must be recognized that after the operation the hepatic artery is carrying a greatly increased proportion of the total blood flow, especially to the regenerated liver tissue. Despite the decrease in hepatic blood flow, there is no measurable fall in oxygen consumption by the liver.[4] This is accomplished by a greater extraction of oxygen from a given volume of blood. The hepatic venous oxygen content after shunts, for example, is usually less than 10 volumes per cent. One might presume from such information that the parenchyma supplied by the distal end of the hepatic circulation might suffer from hypoxia, but such a presumption is belied by the fact that bromsulphalein extraction is well maintained and usually there is no progressive worsening in liver function as a result of the shunt.

FLUID RETENTION

If the patient had had ascites before operation, it tends to recur briefly in the immediate postoperative period. Edema at the ankle on dependence of the extremity sometimes develops or increases after portacaval shunt. This is not necessarily accompanied by an increase in the pressure in the inferior vena cava, and it is seldom much of a clinical problem. These evidences of fluid retention are curious, for an increasing number of patients are being subjected to portacaval shunts for the relief of ascites. In cases in which the operation for this purpose succeeds, a change in the ratio of urinary sodium to potassium occurs consistent with relief of a hyperaldosterone effect—that is, more sodium and less potassium is excreted.[9]

BEHAVIOR AND STUPOR

A problem in the behavior of a neuropsychiatric nature occurs in some 15 to 20 per cent of patients after portacaval shunt.[13] Von Eck described "meat intoxication" in dogs late in the last century, and the problem and even the mechanism have been observed in men for hundreds of years. In 1602

Shakespeare alluded to this in *Twelfth Night:* Sir Toby Belch says to his friend, Sir Andrew Aguecheek: "Oh, Knight! Thou lackest a cup of canary; when did I see thee so put down?" And Sir Andrew answers: "Never in your life, I think; unless you see canary put me down. Methinks sometimes I have no more wit than a Christian or an ordinary man has; but I am a great eater of beef, and I believe that does harm to my wit."

There is no sure way of predicting the incidence of such encephalopathic states. Surely a patient who has had it preoperatively may be more liable to it after a shunt is performed. Unfortunately the various predictive tests applied have given uncertain correlation. These include symptoms from ingestion of methionine, a prolonged elevation of venous blood ammonia after oral ammonium administration, and intolerance to diets containing 120 gm. or more of protein per day. Apparently behavior problems of this order follow portacaval shunt far more commonly than they do splenorenal shunt.

The usual onset of these symptoms is several weeks to months following the creation of the shunt. At first the patients may not notice that they are drowsier and occasionally confused. There is a simple disorganization of thinking with poor retentiveness and poor cooperation with complex requests. The family may appreciate this earlier than the patient, but the patient generally realizes that something is amiss. Later there is a slowing of physical movements and the development of a non-intention, flapping tremor when activating the muscles of the outstretched, extended fingers, lips or head. This flapping tremor is not specific to chronic liver disease, for it also occurs in uremia and respiratory alkalosis. The tremor, interestingly, is not seen in patients or animals with an Eck fistula. As the condition progresses, there may be twitching or even convulsions with variable deep tendon reflexes, inconstant extensor plantar responses, hypertonicity of the muscles, rousable stupor, the specific fetor and, finally, deep coma. Unless other central nervous system disease is present there are no persistent lateralizing neurological signs.

The subtle, early changes may be unmasked by certain discriminative tests. The patient may be asked to write an unfamiliar phrase each day in his record, which may divulge deterioration in his handwriting. With giggling futility, he may find himself completely unable to copy the examiner's example of a five-pointed star constructed from wooden matches. Unless he has long been familiar with mathematics, he is likely to stumble badly at subtracting seven serially from 100. The electroencephalogram is probably the most sensitive means of quantitating the problem. During the confused stage, 5 to 6 per second waves of about 50 microvolts appear, spreading from original sites in the frontal areas. As stupor deepens, the voltage increases and the rate of this diffuse delta activity slows to 2 to 3 per second. In deep coma, triphasic waves may appear. Such reversible patterns have also been noticed in vitamin B_{12} deficiency, hypokalemia and hypoglycemia, but not in experimental Eck fistula.

Various precipitating factors have been demonstrated. Tolerance to barbiturates and opiates is notoriously poor in persons with hepatic cirrhosis. Eight milligrams of morphine can slow the electroencephalographic waves in persons with a tendency toward coma without altering the blood pH or the potassium or ammonia content, according to Sherlock.[13] Effective diuretic programs may also produce electroencephalographic changes and clinical precoma by leading to huge potassium deficits. Progressive encephalomalacia from arteriosclerosis renders the older patients more susceptible. Hypoglycemia is poorly tolerated. These factors are not influenced by protein restriction or by administration of neomycin.

Whenever excessive nitrogen reaches the increased bacterial flora of the small intestine in persons with cirrhosis, whether it is due to dietary protein or gastrointestinal bleeding, this neuropsychiatric syndrome may result. Oral administration of ammonium chloride, methionine and cation exchange resins which swap ammonium for sodium and potassium may also initiate such deterioration. Precoma sometimes follows use of amine-oxidase inhibitors, but most investigators, finding no elevation in blood amines, doubt that the latter contribute to this state.

Among 21 candidates with portacaval shunt and chronic liver disease, Sherlock[13] noted eight with episodic stupor, four with abnormal electroencephalograms, three whose EEGs were labile to oral ammonium chloride, and only six with normal tracings. Perhaps some sensitization of the brain is necessary before patients react. Such factors probably include preexisting cerebral disease, ammonia, unconjugated bilirubin, serotonin deficiency, disordered carbohydrate metabolism, anoxemia, narcotics, infection and hypokalemic alkalosis.

The treatment of porta-systemic encephalopathic states after portacaval shunt is usually at least partially successful. Dietary protein should be limited to what the patient can tolerate; 30 to 40 gm. a day ordinarily maintains a positive nitrogen balance. Precipitating factors must be eliminated. Intestinal antiseptics such as neomycin, 4 gm. daily, usually suppress offending coliform flora. Potassium, carbohydrate and vitamin B_{12} deficits must be replaced. Hemodialysis, glutamic acid, arginine, and dilantin are generally worthless.

Finally, what is the capacity of these patients to carry on after operation? In the Massachusetts General Hospital series,[6] 82 survivors were observed for periods of from one to ten years. Two thirds of them were doing well, unaware of physical limitations and able to undertake full work or household duties. One fourth were reasonably active but handicapped by some physical limitation, half of the time due to progressive cirrhosis. Only 7 per cent remained incapacitated by cirrhosis. Many, despite exhaustive preoperative medical treatment, seemed to be much better postoperatively than before. These changes included an improved feeling of well-being and strength, restoration of normal skin color, return of normal fullness of the face, weight gain, restoration of normal musculature, and regrowth of previously sparse axillary and pubic hair. Venous shunt operations may lead to improvement in organ systems such as the small intestine as well as in the liver itself.

While this improvement occurs at a high price on the contemporary medical market, the drawbacks which have been outlined should not deter physicians from offering portacaval shunt as proper and judicious therapy.

University of Oregon Medical School, 3181 S.W. Sam Jackson Park Road, Portland 1, Oregon.

REFERENCES

1. Baker, L. A., Smith, C., and Lieberman, G.: The natural history of esophageal varices. A study of 115 cirrhotic patients in whom varices were diagnosed prior to bleeding, Am. J. Med., 26:228, 1959.

2. Bollman, J. L.: Experimental method of altering hepatic circulation, Tr. 7th Conf. on Liver Injury, Josiah Macy, Jr. Fdn., 1948.

3. Bollman, J. L., and Grindlay, J. H.: Hepatic function modified by alteration of hepatic blood flow, Gastroenterology, 25:532, 1953.

4. Bradley, S. E., Smythe, C. M., Fitzpatrick, H. F., and Blakemore, A. H.: The effect of a portacaval shunt on estimated hepatic blood flow and oxygen uptake in cirrhosis, J. Clin. Inv., 32:526, 1953.

5. Child, C. G., III: The Hepatic Circulation and Portal Hypertension, pp. 232-258, 1954, Saunders, Philadelphia.

6. Ellis, D. S., Linton, R. R., and Jones, C. M.: Effect of venous-shunt surgery on liver function in patients with portal hypertension, N.E.J.M., 254:931, 1956.

7. MacPherson, A. I. S.: Assessment of the results of surgical treatment in portal hypertension, Gastroenterology, 38:142, 1960.

8. McCredie, J. A., Doggart, J. R., and Welbourn, R. B.: Total arterialization of the liver. I. A comparison of the effects of portacaval anastomosis combined with total arterialization of the portal vein in dogs with healthy livers, Brit. J. Surg., 45:83, 1957.

9. McDermott, W. V., Jr.: The treatment of cirrhotic ascites by combined hepatic and portal decompression, N.E.J.M., 259:897, 1958.

10. Redeker, A. G., Geller, H. M., and Reynolds, T. B.: Hepatic wedge pressure, blood flow, vascular resistance and oxygen consumption in cirrhosis before and after end-to-side portacaval shunt, J. Clin. Inv., 37:606, 1958.

11. Rousselot, L. M., Moreno, A. H., and Panke, W. F.: Studies on portal hypertension. IV. The clinical and physiopathologic significance of self-established (nonsurgical) portal systemic venous shunts, Ann. Surg., 150:384, 1959.

12. Sherlock, S.: Diseases of the Liver and Biliary System. 2nd edition, pp. 209-214, 1958, Blackwell, Oxford.

13. Sherlock, S.: Hepatic Coma. Presented before the American Association for the Study of Liver Disease in Chicago on Nov. 5, 1959.

14. Whipple, G. H., Robscheit-Robbins, F. S., Hawkins, J. W. B.: Eck fistula liver subnormal in producing hemoglobin and plasma proteins on diets rich in liver and iron, J. Exp. Med., 81:171, 1945.

Bronchial Carcinoma

Lobar Distribution of Lesions in 250 Cases

L. HENRY GARLAND, *M.D.*, San Francisco

• In a study of the lobar distribution of tumors in 250 consecutive cases of primary bronchial cancer, it was noted that 130 of the tumors originated in the upper lobes, 11 in the right middle lobe, and 49 in the lower lobes. Some 40 arose in the main bronchi, and most of the remainder were either "hilar" or unspecified in anatomic location.

There was no apparent correlation of the lobar site of these tumors with the lobar location of childhood pneumonic lesions as observed in another group of patients in the same hospital.

SOME INVESTIGATORS have suggested that antecedent pulmonary infection may be a factor in the development of primary carcinoma of the lung, alongside such other potential factors as constitutional defect, cigarette smoke, irritation from air pollutants, virus infection, age and a suitable hormonal milieu. In discussing the problem of precancerous lesions. Stewart[4] recently observed: "The so-called terminal bronchiolar carcinomas seem on occasion to develop in old cicatrices, sites of obsolete tuberculosis, or old pulmonary infarcts. Thus they are an example of scar cancers . . . rare . . . as precancerous lesions."

Since two of my colleagues in the Department of Radiology at the San Francisco General Hosital recently studied the lobar distribution of *pneumonia* in young persons in that hospital,[2] it occurred to me that it might be of interest to examine the lobar distribution of primary bronchial carcinoma in adults seen in the same institution.

MATERIAL

Patients with microscopically verified primary carcinoma of the lung who were referred to, or seen by, members of the Radiological Service of the Hospital constitute the source of the material for this report. Commencing with the cases indexed in the department as recently as May 1960, a consecutive series was withdrawn from the departmental files until 250 cases were available. The age range was 35 to 85; the sex ratio 5 males to 1 female; about two-thirds of the patients were white; the remainder were negro or oriental.

METHOD

The location of the bronchial carcinoma was determined by one or more of the following types of examination: Radiologic, bronchoscopic, thoracotomy and autopsy. Autopsy records were available for approximately one-third of the cases.

Main bronchus tumors were listed separately from lobar and segmental bronchus tumors. In a number of cases the site of origin of the tumor could not be determined. In three cases there was reported to be bilateral involvement.

RESULTS

The right lung showed more frequent involvement than the left. A majority of the lesions occurred in the upper lobes. Most apparently arose in the lobar or segmental bronchi. (See Table 1.)

TABLE 1.—*Lobar Distribution of Primary Bronchial Carcinomas in 250 Cases*

	No. Patients
Right upper lobe	67
Right middle lobe	11
Right lower lobe	30
Right main bronchus	18
Right intermediate bronchus	1
Right hilum	1
Right lung, site unspecified	5
Total, right	133
Left upper lobe	63
Left lower lobe	19
Left main bronchus	21
Left hilum	3
Left lung, site unspecified	6
Total, left	112
Bilateral lesions of approximately equal size, or upper lobe lesions	2
Bilateral main bronchus lesions, involving carina and trachea	1
Site unspecified	2

From the Department of Radiology, University of California School of Medicine, San Francisco 22, and the Department of Radiology, San Francisco General Hospital, San Francisco 10.

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TABLE 2.—*Percentage Lobar Distribution of Primary Bronchial Carcinomas*

Site	Number of Patients	Per Cent of Series	
Right upper lobe	67	27	53
Right middle lobe	11	4	
Right lower lobe	30	12	
Right main bronchus	18	7	
Other (see Table 1)	7	3	
Left upper lobe	63	25	44
Left lower lobe	19	8	
Left main bronchus	21	8	
Other (see Table 1)	9	3	
Bilateral	3	1	
Unspecified	2	1	
	250		

The percentage distribution of lesions is summarized in Table 2. The ratio of upper to lower lobe involvement was approximately two and a half to one.

The histologic diagnoses in this group of cases were recorded as follows:

	Per Cent
Squamous cell carcinoma	33
Anaplastic carcinoma	30
Adenocarcinoma	10
Alveolar carcinoma	2
Unclassified or mixed carcinoma	25

DISCUSSION

It is evident that in this small group of cases, bronchial carcinoma was seen a little more frequently in the right than in the left lung (approximately 133 to 112), and that the upper lobes showed more frequent involvement than the remaining lobes. This coincides with the experience reported by Ochsner in 1453 cases.[3] In that series the right lung was involved slightly more often than the left, and in almost 60 per cent of the cases the upper lobe was involved. Ochsner recorded the apparent bronchial site as follows: Main bronchus, approximately 10 per cent; lobar bronchus, approximately 66 per cent; peripheral bronchus, approximately 24 per cent. We are currently investigating a larger series of cases in an attempt at more precise determination of the site of origin of "lobar" tumors.

In the previously mentioned study of lobar pneumonia in young persons,[2] Heald and Coulson found that 79 per cent of the lesions occurred in the right lung and 21 per cent in the left; about 41 per cent were in the upper lobes. It is evident that there is not a good correlation between the location of antecedent lobar pneumonia in the young people in this hospital, and primary bronchial carcinoma in the independent older group.

It is also evident that a majority of the lesions were recorded as occurring in the lobar and segmental bronchi, rather than in the trachea and main bronchi (where Auerbach[1] found a significant incidence of "smoking" lesions which he personally interpreted as metaplasia and carcinoma in situ—an interpretation disputed by other pathologists). Only two of 250 cases showed carcinoma that might be considered as being multicentric, as contrasted with Auerbach's frequent finding of multiple bilateral lesions of "noninvasive carcinoma." The latter, of course, may be reversible changes, or may in fact seldom progress to clinical invasive disease.

450 Sutter Street, San Francisco 8.

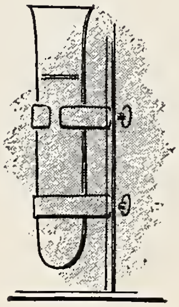
REFERENCES

1. Auerbach, O.: Carcinoma in situ and early invasive carcinoma in tracheobronchial tree, J. Thor. Surg., 34:298, 1957.

2. Heald, J., and Coulson, W.: Lobar pneumonia: The distribution of sites in infants and children, Calif. Med., 92:334, 1960.

3. Ochsner, A.: Carcinoma of the lung, J. Am. Geriat. Soc., 8:159, 1960.

4. Stewart, F. W.: The problem of the precancerous lesion, Postgrad. Med., 27:317, 1960.



Drug Dangers and Reactions

RALPH W. WEILERSTEIN, *M.D.*, San Francisco

• The protection of the consumer against dangerous, adulterated, and misbranded drugs provided by the Federal Food, Drug, and Cosmetic Act has failed in some instances. A general program of reporting adverse drug reactions has been initiated on a pilot basis. Arrangements are being made to extend this program into larger hospitals. Better and more complete reporting of adverse drug reactions together with tightening of the Food and Drug law regarding new drugs will improve this situation.

Recently the president of the National Academy of Sciences appointed a committee at the request of the Secretary of Health, Education, and Welfare to review the policies and procedures used by the Food and Drug Administration in reaching decisions and to present recommendations. This committee has completed its work and has made specific recommendations that would give the Food and Drug Administration authority to require proof of efficacy as well as safety of all new drugs, and would provide it with sufficient resources to meet the responsibilities assigned to it.

THE FEDERAL FOOD, Drug and Cosmetic Act is intended to protect the consumer against dangerous, adulterated and misbranded drugs and to provide for the safety of new drugs introduced into interstate commerce. In the 22 years since the passage of the Federal Food, Drug and Cosmetic Act of 1938, there have been many situations in which the protection that this act is intended to provide somehow failed.

The original reason for the inclusion of a new drug section in this law was the so-called Elixir of Sulfanilamide® incident. In that case, a manufacturer, attempting to improve his vehicle for the ingestion of sulfanilamide, used an excellent solvent—diethylene glycol—which was tasteless and odorless. Its only drawback was that it was also highly toxic. One hundred eight persons lost their lives because sulfanilamide, diluted with diethylene glycol (which is also the active ingredient in some makes of antifreeze), was introduced as a medicine without proper testing.

After the passage of the 1938 act, it was found that safety might be a goal that is not always attained. One day, the editor of a nationwide medical publication received a manuscript entitled "Coma Due to Sulfathiazole." The authors, two well known eastern physicians, were reporting for the information of the medical profession that several of their patients had gone into coma when given sulfathiazole. This was at a time when sulfathiazole was still a new drug. The editor, sensing some possible discrepancy here, referred the matter to the Food and Drug Administration. Investigation revealed that one of our country's leading drug manufacturers was allowing the "tailings" from batches of phenobarbital (of a famous brand) to slip into the sulfathiazole tablets, just as the corner butcher may let you have some of the hamburger left in the meat grinder from the previous customer. This situation was easily corrected. Another very well known manufacturer of fine chemicals and drugs happened one day to get his cadmium chloride mixed with his calcium chloride because of a labeling mixup, and still another confused cream of tartar with tartaric acid. Fortunately, these errors were detected before the articles reached the consumer.

One of the most interesting and one of the more sophisticated misbrandings grew out of discovery by one of our largest drug manufacturers that a drug, chemically known as carbaminoyl choline (a cholinesterase inhibitor), would be effective in a dosage of 0.25 mg. as a liquid in a 1 cc. ampul for the relief of postoperative distention. The ophthalmic preparations department of the same firm also found that this same drug, dispensed in 1 cc. ampuls, in powder form, in the amount of 0.15 gm., was an excellent drug for the topical treatment of glaucoma. Both drugs were put out by the same firm in 1 cc. ampuls, one a liquid, the other a powder: both were found to be invoiced as 1 cc. ampuls, and because of the confusion in identifying the proper products on the wards of hospitals, in pharmacies, at wholesalers and all along the line, 15 persons suddenly died unexpectedly. In none of these cases did the attending physician realize what the cause of death was until we made our investigation.

Then it was discovered that the fatal dose of this drug was much less than 150 mg., which was 600 times the intended injectable dose. Death was by pulmonary edema and collapse. A careful control of the production and marketing operation would have prevented these deaths. A criminal prosecution brought a plea of guilty and a maximum fine, but this did not restore life to the deceased.

Dr. Weilerstein is the Associate Medical Director, U. S. Food and Drug Administration, Bureau of Medicine (San Francisco).

Submitted November 21, 1960.

A few years ago the phenothiazine tranquilizers achieved tremendous publicity as the answer to the problem of mental illness. We know, of course, that the performance was less than the promise, but there was wide use of them—and there still is, as adjuvant therapy, in this disease.

From one hospital, and from one medical school and then from another, we began to receive scattered reports of an "idiosyncrasy to Chlorpromazine," which turned out to be liver damage. Each physician observing such a case thought he was the only one. At one time, it was estimated that liver damage developed in from 1 per cent to 5 per cent of all patients receiving this drug. The Food and Drug Administration was able to require warnings and information concerning the hazards inherent in the use of these drugs, and this information has become common knowledge to the American physician.

The staff available to control and review all the claims, all the evidence as to safety of the drugs produced in this country is pitifully small. A handful of doctors in Washington review new drug applications; an even smaller handful look over the reports concerning existing drugs. There is just being set up a program for general reporting of adverse drug reactions so that there may be at least a central reservoir of information concerning what the drugs—old and new—are doing in the way of unusual reactions.

Five years ago, the Food and Drug Administration began a pilot study on the reporting of adverse drug reactions from ten eastern and midwestern hospitals. From this pilot study, there has grown a program which this year was expanded to bring in reports from various places around the country, where adequate records are kept, of adverse drug reactions as they occur. With the planned expansion of the reporting system, the medical profession and the Food and Drug Administration can learn promptly just what the population of this country is encountering in the way of drug reactions; as soon as these reports are received steps may be taken to protect the physician and the patient from failure of the drug labeling to bear appropriate warnings or instructions.

The Food and Drug Administration is at present attempting to set up such arrangements with several of the larger hospitals in this area. It is also looking at the laws under which it operates and is finding, with the help of interested physicians and others, that these laws may need strengthening, for they were drawn up at times and in situations vastly different from the age of modern science and technology which has changed the whole character of drug production in the past two decades.

Recently, the president of the National Academy of Sciences appointed a committee, at the request of the Secretary of Health, Education, and Welfare, to review the policies and procedures used by the Food and Drug Administration in reaching decisions and to present recommendations. This committee has just completed its work and it has made the following recommendations:

1. The FDA should be given statutory authority to require proof of the efficacy, as well as the safety, of all new drugs. Treatment of a patient with an ineffective drug in place of an effective one may jeopardize his recovery. This is true even though the drug may not be intrinsically harmful, and even though the specific condition for which the drug is given may not be ordinarily regarded as life-threatening.
2. The FDA should be given statutory authority to require manufacturers of new drugs to maintain records and submit reports of clinical experience and other relevant data, not only before but after the drug is released for sale, as requested by the Commissioner in his proposed Factory Inspection and Drug Amendments of 1960. Any evaluation of a new drug is subject to revision in the light of broader experience, and the FDA must be in a position to advise the profession and warn the public promptly whenever new hazards are revealed.
3. The FDA should be given statutory authority to apply certification procedures to all antimicrobial agents used in the prophylaxis and treatment of infectious diseases. The Committee sees no reason for limiting certification to those antibiotic preparations which happen to have come on the market prior to 1950, and further believes that all agents employed for equally serious conditions should be subject to equivalent measures of control.
4. The Committee recognizes the importance to the public health of ensuring that all drugs are prepared under the highest standards of quality control. It, therefore, endorses the Commissioner's proposals in the Factory Inspection and Drug Amendments of 1960 to clarify and strengthen existing inspection authority, and to require that all drugs be manufactured and packaged under adequate controls.
5. The Committee believes that the information supplied to physicians concerning drugs should be not only accurate, but also complete, and that the date of such information is essential to its proper evaluation. It, therefore, endorses the proposed amendments to present labeling requirements published by the Commissioner in the Federal Register for 22 July 1960.
6. The Committee considers that the advertising of pharmaceuticals requires more careful regulation than that of products unrelated to the

prevention and cure of disease. It, therefore, recommends that careful study be given to the problem of coordinating the supervision of labeling, promotional material, and other advertising of drugs, now divided among several agencies of the government, and to means of ensuring that all information concerning drugs conveyed to the profession and the public by whatever media be in conformity with scientific fact.

7. When a decision has been reached concerning an application, a statement should be prepared and incorporated in the file summarizing the conclusions, the names and opinions of those involved, and such other data as may be necessary to provide a concise record of the basis for the decision. This should be of great assistance in the administrative review of current actions and in the scientific review of the files in relation to subsequent applications, as well as when the advice of consultants is sought.
8. The staff members responsible for processing applications should be supported to the utmost in their efforts to obtain submission of truly dependable scientific information on the efficacy and safety of the products. The data initially submitted by the manufacturer are not always of sufficient quality and quantity to permit a sound decision as to the merits of the product.
9. The FDA should be strongly supported in its effort to maintain a research program of high quality on the methodology and standardization of drug testing and related areas of basic science. This is important not only to improve the methods available for carrying out its responsibilities to the public but also as an aid in recruiting and retaining competent scientists on the staff.
10. The Committee urges the Commissioner to seek such authorization as may be necessary to establish an advisory organization of scientific and technical experts as a recognized resource for advice on criteria, procedures and policies for the execution of the responsibilities of the FDA.
11. It is recognized that these various recommendations cannot be carried out without expanded resources, both of funds and of personnel. The committee also considers that the present resources of the FDA are less than adequate to meet existing responsibilities. It, therefore. urges that the FDA be granted the authority and funds required to employ and retain larger numbers of highly qualified personnel and to support their activities, and endorses the recommendations made to this end by the Citizens' Advisory Committee in 1955.

The Secretary of the Department of Health, Education and Welfare has concurred with all these recommendations, except No. 6, which he has requested be given further study. When these recommendations are implemented, there will be, I hope. fewer drug reactions and dangers, and those that do occur will be recognized much sooner.

Department of Health, Education, and Welfare, Federal Office Building, Fulton and Leavenworth Streets, San Francisco 2.

Dangerous and Hypnotic Drug Act

WILLIAM M. WHELAN, *LL.B.*
Director of Special Services
California Medical Association, San Francisco

In 1945, California enacted the Dangerous Drug Law. Said to be the most comprehensive regulatory measure concerning control of hypnotic drugs,[1] it is a part of the Pharmacy Law and is administered by the State Board of Pharmacy.

Section 4211 of the Business & Professions Code defines *Dangerous and Hypnotic Drugs:*

" 'Dangerous Drug': 'Hypnotic Drug.' 'Dangerous drug' means any drug unsafe for self-medication, except preparations of drugs defined in subdivisions (e), (f), (h), and (i) hereof, designed for the purpose of feeding or treating animals (other than man) or poultry, and so labeled, and includes the following:

"(a) Any hypnotic drug. 'Hypnotic drug' includes acetyluria derivatives, barbituric acid derivatives, chloral, paraldehyde, sulfonmethane derivatives, or any compounds or mixtures or preparations that may be used for producing hypnotic effects.

"(b) Aminopyrine, or compounds or mixtures thereof.

"(c) Amphetamine, desoxyephedrine, or compounds or mixtures thereof except preparations for use in the nose and unfit for internal use.

"(d) Cinchophen, neocinchophen, or compounds or mixtures thereof,

"(e) Diethyl-stilbestrol, or compounds or mixtures thereof.

"(f) Ergot, cotton root, or their contained or derived active compounds or mixtures thereof.

"(g) Oils of croton, rue, savin or tansy or their contained or derived compounds or mixtures thereof.

"(h) Sulfanilamide or substituted sulfanilamides, or compounds or mixtures thereof, except preparations for topical application only containing not more than 5 per cent (5%) strength.

"(i) Thyroid and its contained or derived active compounds or mixtures thereof.

"(j) Phenylhydantoin derivatives.

"(k) Any drug which bears the legend: 'Caution: federal law prohibits dispensing without prescription.'

"(l) Hypnotic drugs when combined and compounded with non-hypnotic drugs."

- **It is unprofessional conduct within the meaning of the Medical Practice Act to prescribe a dangerous drug without either a medical examination by a physician or other medical indications.**

Dangerous and hypnotic drugs are specifically defined by both state and federal law and distribution is strictly regulated.

A physician may administer to his own patients such amounts of dangerous drugs as are necessary for the immediate needs of the patient. The physician may obtain such needed amounts of these drugs by an order placed with a pharmacist marked "for administration to immediate needs of patients." A licensed physician may also prescribe dangerous and hypnotic drugs for patients and such prescriptions may be refilled on the specific authorization of the physician.

A physician who dispenses dangerous and hypnotic drugs to patients must obtain a hypnotic drug license; he must use specific purchase orders when purchasing; the drugs must be labeled in the manner provided by law; and all records of sale shall be open to inspection by authorized officers of the law and kept for three years.

By the Principles of Medical Ethics physicians are bound to limit the source of their professional income to medical services actually rendered. Recent decisions of the Judicial Council answer questions concerning a physician's interest in a corporation which purchases, packages and sells medicines under a corporate name. Also answered are questions as to the measures that exist to prevent physicians from abusing the privilege of owning a pharmacy, and whether a physician can ethically rent space in a building owned by him to a pharmacist with a percentage of the income of the pharmacy as rental.

The public welfare of California and the nation as determined by legislation strictly regulates the distribution of dangerous drugs. It is in the best interest of the medical profession and its patients that these laws be understood and carefully observed.

The Federal Food, Drug and Cosmetic Act (FFDC) defines and regulates narcotic and hypnotic drugs by prohibiting, among other things, the *misbranding* of them. Section 502(d) provides that a drug shall be deemed to be misbranded—

"If it is for use by man and contains any quantity of the narcotic or hypnotic substance alpha-eucaine, barbituric acid, beta-eucaine, bromal, cannabis, carbromal, chloral, coca, cocaine, codeine, heroin, marihuana, morphine, opium, paraldehyde, peyote, or sulfonmethane; or any chemical derivatives of such substance, which derivative has been by the Secretary, after investigation, found to be, and by regulations designated as, habit forming; unless its label bears the name, and quantity or proportion of such substance or derivative and in juxtaposition therewith the statement 'Warning—May be habit forming.' "

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[1] *The Narcotic Problem,* edited by W. L. Prosser, 1 U.C.L.A. Law Review 405-546.

The problem of addiction caused by the use of narcotics has been recognized for centuries. Sedatives or hypnotics are drugs recently developed. Chloral hydrate is said to be the oldest. It was discovered in 1832 and introduced into medicine in 1869 by Liebreck. A German scientist, in 1907, discovered derivatives of barbituric acid while working with coal tar. Winthrop & Co. brought the drug Veronal, a barbiturate, to this country in 1907. It was not until after World War I that any large production of barbiturates was begun in this country.

The misuse of them has presented serious problems in recent years. Among habitual users, these drugs are called: *red birds, red devils, yellow jackets, brownies, green dragons, blue bombers, violets* and *goofballs.*

There is a lively dispute among authorities as to whether the hypnotic drugs are properly classified as addictive. In public policy of the State of California, hypnotic drugs are classified as dangerous and their distribution is strictly regulated.

It is well established that a state, in the exercise of its police power, may regulate and control the manufacture, sale, distribution and possession of drugs in the interest of public health and welfare.[2]

Section 4051 of California's Business & Professions Code provides that this "chapter" of the law which concerns licensing of pharmacists and manufacturers of drugs "does not apply to or interfere with anyone who holds a physician's and surgeon's certificate or certificate to practice chiropody and who is duly registered as such by the Board of Medical Examiners or the Board of Osteopathic Examiners of this State, with supplying his own patients with such remedies as are necessary in the treatment of the condition for which he attends such patient if he acts as their physician and is employed by them as such and provided such person keeps accurate records of drugs dispensed and that such drugs may not be dispensed by a nurse or attendant."

The Dangerous and Hypnotic Drug Law, by Section 4226, provides: "This article does not require a license from and shall not apply to or interfere with a physician, dentist, chiropodist or veterinarian in administering hypnotic drugs to his own patients. Such hypnotic drugs shall be administered only by the physician, dentist, chiropodist or veterinarian."

Section 4226 is an exception to Section 4222 which provides that "every person who furnishes any hypnotic drug to any other person shall first obtain from the board [State Board of Pharmacy] an hypnotic license."

Section 4213 defines the word *administer* as used in the article to mean "the furnishing by a physician and surgeon, dentist, chiropodist or veterinarian *to his patient* of such amount of drugs or medicines referred to in this article *as are necessary for the immediate needs of the patient.*" "Administering" and "furnishing" drugs for the "immediate needs" of the patient would appear to be different from "dispensing" or prescribing for the general need of the patient. An exact definition of a patient's "immediate needs" is not provided by the law. But each physician, where furnishing dangerous drugs for the immediate needs of the patient, ought to use some reasonable rule of thumb such as twelve hours or twenty-four hours or some minimal dosage as his standard of judgment of what constitutes sufficient dangerous drugs for the immediate needs only of his patient.

After Section 4226 was enacted, the State Board of Pharmacy asked the Attorney General[3] whether a practitioner "who administers hypnotic drugs to a patient will be required to obtain a hypnotic drug license and purchase hypnotic drugs upon hypnotic drug purchase order form."

In answer to this question, the Attorney General considered three different situations:

A. *Administration of Hypnotic Drugs to His Own Patients*

When a physician administers, to his own patient, such amounts of hypnotic drugs as are necessary for the *immediate needs* of the patient, he is not required to have a hypnotic drug license or required to purchase those hypnotic drugs upon a hypnotic drug purchase order form.

Rule 1745 of the State Board of Pharmacy provides that a pharmacy may furnish to a physician and those others named in the law, hypnotic drugs for "*administration to patients*" upon an order showing the date, address, license classification, name of the practitioner and the name, type, strength and quantity of hypnotic drugs ordered. Such order should bear the words: "For Administration to Immediate Needs of Patients" or words of like intent. Such orders are placed by the pharmacist in a special file.

The Attorney General further ruled that there is no requirement that a physician keep a separate record of the hypnotic drugs purchased or supplied to his patients which are necessary for their immediate needs. Good medical practice would dictate, however, that the physician record in the patient's clinical record the hypnotic drugs administered.

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[2] Minn. ex rel Whipple v. Martinson 256 U. S. 41 (1920).
In re Yun Quong 159 Cal. 508, 114 Pac. 835 (1911).

[3] 18 Opinions Attorney General Cal. 209.

It should be emphasized that hypnotic drugs shall be administered only by the physician, dentist, etc. There is only one exception to this: In any licensed or county hospital, a registered nurse, on order and direction of a physician, may administer hypnotic drugs to a patient registered in the hospital or to a patient under emergency treatment in the hospital, in accordance with Section 4225. In a hospital, a special record must be kept of the administration of hypnotic drugs, showing the amount given, the type, date given and the name and address of the person to whom administered. The law does not specifically require it, but sound administration would dictate that the name of the physician who ordered the drug and the registered nurse who administered it also be recorded. This section authorizes a hospital that does not employ a pharmacist to purchase a supply of hypnotic drugs on a hypnotic drug purchase order form in the name of the hospital.

Authority granted in this section is to "licensed or county hospitals not employing pharmacists." Section 4047 excludes from the term "licensed hospital," nursing homes, maternity homes, rest homes, sanatoriums or lying-in asylums. Such establishments would not appear to have authority to order and have on hand a supply of hypnotic drugs, unless they employed a pharmacist. It is understood that some of these facilities make a contract with a local pharmacist in order to provide a supply of needed hypnotic drugs.

B. *Dispensing or "Purchase Order Practitioner"*

Another means of furnishing hypnotic drugs is outlined in Section 4222: "Every person who furnishes any hypnotic drug to any person shall first obtain from the board [State Board of Pharmacy] an hypnotic license, etc." The board, under Section 4223, shall supply at cost a book of serially numbered triplicate hypnotic drug purchase order forms to physicians and others licensed under 4222.

The physician adopting this procedure is usually referred to as a "purchase order practitioner." He is not limited in the amount of hypnotic drugs he may purchase on an order form, nor is he restricted to furnishing an amount sufficient only for the immediate need or use of his patient.

Due to the dangerous character of hypnotic drugs, a physician should only furnish such amounts as are reasonably necessary for the condition for which he attends his patient.

Section 4228 provides that no person shall dispense any dangerous drug upon prescription except in a container correctly labeled with the date, name and address of furnisher and person for whom prescribed, and directions for use. The section specifically applies to dangerous drugs dispensed "upon prescription." Does it apply only to dispensing by a druggist upon prescription, or does it apply also to dispensing by a physician upon his own unwritten prescription? The advice to a physician on this point is: Follow the provisions of this act. Because of the wording of the statute, you might not technically be convicted of violating the criminal provisions of the act if you did not properly label dangerous drugs furnished, but good public policy and sound medical practice dictate that you should observe the precautions of the law concerning labeling dangerous drugs you dispense.

Section 4224 provides the method by which a physician who dispenses hypnotic drugs shall order them. The purchase order forms furnished by the State Board of Pharmacy to licensees are filled out in triplicate showing the date, name of supplier, name and quantity of hypnotics ordered and signature, license number and address of licensee. The original and one copy of this form are sent to the supplier, who must forward the duplicate copy to the State Board of Pharmacy within thirty days, and the third copy is kept by the physician for three years. If the drugs are purchased out of state, then the original is sent to the supplier and the duplicate is sent directly to the State Board of Pharmacy.

Recently, the attorney general of an eastern state uncovered an extensive counterfeit drug operation which was nationwide in scope. Analysis showed that well-known brand names were affixed to products that were not up to standard and were harmful in some instances. The counterfeiting was so skillful that some drugs could not be recognized as bogus except by chemical analysis. These drugs were "bargains" sold at less than regular prices by an alleged jobber.

Physicians who are *furnishing* or *dispensing* by sale hypnotic drugs in quantities greater than for the immediate needs of patients, are assuming certain legal and practical responsibilities which must be well understood.

C. *Furnishing by Prescription*

The third method by which a physician may furnish dangerous hypnotic drugs to his patients is by prescription, after examination of the patient or upon medical indication therefor. It is unprofessional conduct within the meaning of the Medical Practice Act to prescribe a dangerous drug without either a medical examination by the physician or other medical indication. This would be construed by the courts to mean that ordinarily a medical examination of a patient must be made before a dangerous drug is prescribed. However, other medical indications also give him authority to prescribe dangerous drugs.

If a patient is in the hospital, a nurse or intern might report facts of an emergency nature upon which a physician could reasonably prescribe immediately needed dangerous drugs. Physicians associated together are frequently familiar with the medical problems of each other's patients, even though each might not have examined all of the other's patients. In emergencies and when they serve for one another on days off or at times of sickness or vacation, one of them might be called upon to prescribe for an associate's patient whom he had not examined. Yet from information available to him through the office records and consultation, he might have sufficient medical indication to prescribe a dangerous drug in an emergency. These examples are given as guides as to what is meant by the words "medical indication" and not as a limitation on the meaning of them.

The impression might be gained from recent articles appearing in print that a physician could comply with the law that he must examine the patient or that there must be a medical indication for the use of drugs prescribed merely by asking if the patient is nervous or by asking him to stick his tongue out.

However, the Board of Medical Examiners in applying the above requirement of the Medical Practice Act has administered it strictly and realistically. Any physician guilty of subterfuge to cover up the peddling of narcotics invariably has the book thrown at him, and in suspicious circumstances the mere showing of an entry on the physician's record that a patient needed narcotics is viewed with skepticism.

It has often been contended before the Board that a "physician's glance" could tell that a man was sick and needed narcotics. This contention has never impressed the physicians on the Board. The record of the Board indicates that it has not been fooled by phony, inadequate physical examinations or trifling medical indications. It can be expected that the Board would hear expert testimony from other physicians on the medical question: Were the drugs prescribed shown to be necessary by either a medical examination or other medical indications?

Drugs may not be dispensed by a nurse or attendant and may only be prescribed by a physician, dentist, chiropodist or veterinarian, according to sections 4051 and 4227.

Section 503(b) of the FFDC Act exempts from its labeling and packaging provisions a drug intended for use by man, such as those described in Section 502(d), when:

1. Such drug is administered by or under the supervision of a licensed practitioner; or

2. Such drug is dispensed only upon a written prescription of a practitioner licensed by law to administer such drugs.

This section provides specifically: "The act of dispensing a drug contrary to the provisions of this paragraph shall be deemed to be an act which results in the drug being misbranded while held for sale."

In a recent case, the court has applied the provisions of Section 503 to the act of dispensing drugs by a licensed physician when such drugs were not properly labeled or packaged.[4] In this case, Federal agents had purchased barbiturates from Doctor Brown. He was arrested. At his trial the jury found him guilty of dispensing misbranded drugs contrary to the provisions of Section 503. The case was appealed and the appellate court affirmed the decision of the trial court. Part of the opinion follows:

"There seems to be some concept among members of the medical profession that to have a license to deal in medicine carries a license to deal in barbiturates. That is not the law. The medical profession might just as well understand it. If I come to you for treatment and you in your medical capacity examine me, and after examination determine that certain barbiturates would be beneficial to me, then you have a right to write a prescription to me and then I have a right to get them and use them but not otherwise."

REFILLING PRESCRIPTIONS

Section 4229 provides that no prescription for any dangerous drug may be refilled except upon authorization of the prescriber. The authorization may be given orally, or it may be given at the time of the original prescription.

A prescription refill can only be authorized by the prescriber, such as a physician, either orally or in writing. A nurse or attendant is not authorized to order a prescription refill, but may relay an authorization given by the physician.

STOCKS OPEN FOR INSPECTION

Section 4231 provides that all stocks of any dangerous drug of a physician and the others mentioned in the Act "shall be at all times during business hours open to inspection by authorized officers of the law." Sections 4232 provides that all records of sale or disposition of dangerous drugs shall be open to inspection and be preserved for three years. Ordinarily, such records will not be examined unless there is an indication that the Dangerous Drug Act is being intentionally violated or disregarded.

VIOLATION PENALTY

Violation of any provisions of the Dangerous Drug Act is a misdemeanor punishable by fine or imprisonment. Upon conviction of a physician, he would be subject to having his license to practice revoked or suspended by the State Board of Medical Examiners.

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[4] Brown v. U. S. [Texas, 1958] 250 F 2d 745.

As a matter of information, under Section 4163 of this law, a report must be made to the State Board of Pharmacy when chemical examination of tissue or an organ or body fluid shows the presence of poison. Details concerning the poison must also be reported.

For the fiscal year 1958-59, the coroners' offices of the State reported 666 cases distributed as follows:

	No. Cases	Per Cent of Total
Hypnotic drugs	428	64
Tranquillizing drugs	19	3
Industrial, agricultural and household	106	16
Narcotics	41	6.2
Carbon monoxide	48	7.2
Miscellaneous drugs	24	3.6

Many of these were cases of intentional suicide or attempts at self-destruction. Perhaps if drugs had not been used, some other means would have been employed. Data on cases of this kind are often used to illustrate to the public the dangerous nature of and the need for strict control of hypnotic drugs.

It is doubtful that such a conclusion could be supported in fact or logic. For example, the suicide rate in San Francisco is almost double that of Los Angeles, a difference that hardly can be ascribed to the availability of drugs.

PRINCIPLES OF MEDICAL ETHICS

The American Medical Association's Principles of Medical Ethics provide: "In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. . . . Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient."

Recently, several questions concerning ethical problems relating to a physician's interest in a drug corporation, proper measures to prevent abuse of the privilege of owning such an interest, and rentals by a physician of store space to a pharmacy with a rental based on percentage of income, were answered by the Judicial Council.*

Question: Is it ethically permissible for a physician to have an interest in a corporation which purchases, packages, and sells medicines under a corporate name? Is it permissible for a group of physicians to form a corporation for such a purpose?

Answer: It is not *in itself* unethical for a physician or a group of physicians to own or invest in the stock of a pharmaceutical company. The *Principles of Medical Ethics*, as recently as June, 1954, contained the statement "an ethical physician does not engage in barter or trade in the appliances, devices or remedies prescribed for patients, but limits the sources of his professional income to professional services rendered the patient."

In June, 1954, the *Principles of Medical Ethics* was revised to provide in this regard: "It is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise unavailable . . ."

In June, 1955, the *Principles of Medical Ethics* was revised again to provide that "it is *not* unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient."

At the June, 1957, Annual Session of the American Medical Association the present *Principles of Medical Ethics* was adopted. Section 7 of the *Principles* provides that "drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interest of the patient."

In opinions published in *The Journal* (March 30, 1957, and Nov. 15, 1958) the Judicial Council, interpreting this principle of medical ethics, expressed the opinion that the physician as a citizen has the right to make investments according to his own best judgment and that the fact that he is a physician should not preclude him from investing in the stock of a pharmaceutical company, provided, of course, that no subterfuge is employed and no unusual control of the company is exercised by the doctor. The Council also expressed the opinion that it is not, in itself, unethical for physicians to own pharmacies, provided there is no exploitation of the patient.

Question: What measures exist to prevent doctors from abusing the privilege of owning a pharmaceutical company or an interest in it?

Answer: In its opinions published in *The Journal* (March 30, 1957, and Nov. 15, 1958) and in its report to the House of Delegates at the Clinical (Dallas) Meeting in 1959, the members of the Judicial Council agreed that there are many variations of this practice. There are, therefore, many questions of fact to be resolved locally before a particular practice can be evaluated properly.

If a complaint is made regarding the practices of a particular physician or a group of physicians who own a pharmaceutical company, the local medical society has a positive obligation. The society must ascertain *whether the practice exploits the patient, whether it results in inferior medical care, whether the costs of drugs to the patient are increased, whether the situation is an act in derogation of the dignity and honor of the medical profession and its traditions, whether the particular practice is a subterfuge to permit the doctor to accept a rebate, whether it tends to cause the doctor to overprescribe or prescribe less effective drugs, or whether the practice permits the doctor to exercise control over the company so as to work against the best interests of the patient.*

The members of the Judicial Council agree that any complaint against a physician or group of physicians who own a small pharmaceutical company should be directed to the local medical society for investigation of the facts and for initial disposition of the ethical question involved. *Neither intentional nor inadvertent abuse of the privilege should be permitted by the medical profession.*

Question: May a doctor who is owner of a building rent space in that building as a pharmacy, with a percentage of the income of the pharmacy as rental?

Answer: No. The rental should be a fixed one. Were the rental to be based on the amount of business, it might well be argued, and, indeed, be the case, that fee splitting existed. In addition, the temptation would be ever present for the doctor-owner to encourage patients to take their prescriptions to that pharmacy. The evils inherent in such practice are too obvious to be mentioned.

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*The Judicial Council has authorized the publication of the opinions.—Edwin J. Holman, Secretary.

Small Bowel Rupture from Abdominal Blows

HARRY PERELMAN, *M.D.*, Los Angeles

• Rupture of the small bowel with nonpenetrating abdominal trauma occurs in one-third to one-fourth of all abdominal injuries. Perforation of the bowel can result from injuries of crushing, bursting or tearing type. The symptoms are those associated with peritoneal irritation. Repeated observation and examination is necessary for diagnosis. Operative repair is mandatory. Two cases, one in a child, are reported.

RUPTURE of almost every organ within the abdominal cavity has occurred without external signs of injury. Injuries to the kidneys, spleen, liver and pancreas are the most common, these being solid, fixed abdominal viscera. From one-quarter to one-third of all abdominal injuries involve the small bowel alone.[2,8,11] Cottrell[1] noted that the intestine was injured in 10 per cent of 800 cases he reviewed. Trauma is produced by blows, falls, blasts, car collisions and similar accidents. Automobile collision is by far the most common cause of nonpenetrative abdominal trauma, impact with the steering wheel (which is also an etiological factor in liver trauma)[9] being noted frequently. The fragility of the small bowel and the fact that it can be ruptured by trauma that does not injure the skin have been recognized since the time of Aristotle. It was a common cause of death in the Middle Ages, often from kicks of horses or blows.[7]

Small bowel rupture occurs most commonly where the bowel is either firmly fixed to the posterior abdominal wall or has a short mesentery—these sites being the duodenum, the jejunum near and immediately distal to the ligament of Treitz, and the ileum just proximal to the ileocecal junction. The side most often involved is the antemesenteric border. Multiple lacerations of the small bowel occur in 10 per cent of cases.[1,3,5,12]

MECHANISM OF THE RUPTURE

Geohegan[3] expressed belief that the majority of ruptures of the small bowel from nonpenetrating trauma are bursting injuries caused when a sudden force is applied to the abdominal wall and the increase in the intra-abdominal and intraperitoneal pressure is transmitted to the hollow viscera. He postulated that the length and tortuosity of the intestinal tube is such that the sudden increase in pressure in the mid portion may not be dissipated by release through its open ends and the pressure, reaching a maximum at a point near a turn or kink which provides a trap for the fluid and gas, causes rupture there. Poer and Woliver[10] said that most frequently such perforations result from a crushing injury in which the external force compresses the bowel against the spine or pelvic bones, but that sometimes tearing injuries may result from a violent force being applied at a tangent to the body.

SYMPTOMS

Perforation of a hollow viscus must be suspected when there is persistent abdominal pain, spasm and tenderness, either with or without nausea or vomiting, after severe trauma to the abdomen. Signs of peritoneal irritation, with local or general abdominal tenderness and rigidity, are present. The higher the perforation, the more likely that chemical irritation is the cause of peritonitis; the lower the perforation, the more likely that peritonitis is bacterial.[6] Peristalsis is either absent or greatly diminished. Pain is severe, continuous and generalized. Pain referred to the shoulder or neck is indicative of diaphragmatic irritation due to either free air or escaped fluids. Pain referred to the rectum and perineum with associated tenesmus is frequently a sign of high rectal or sigmoid injury. Pain may be referred to the right testis as a result of irritation of the genitofemoral nerve by spillage from retroperitoneal rupture of the duodenum. A very significant character of peritoneal pain due to spilling of either hollow visceral contents or blood is the increase that occurs when the patient moves. Hemorrhage is not an outstanding feature.

Complete rupture may be single or multiple and may be associated with mesenteric contusions, tears or detachments; in such instances there will also be severe hemorrhage. Localized signs are commonly absent for three to twelve hours.

The pulse rate increases as soiling of the peritoneum progresses. It is also increased in hemorrhage and shock and is therefore significant of serious intra-abdominal injury.

From the Department of Surgery, Culver City Hospital, Culver City. Submitted August 31, 1960.

This study was aided by a grant from the Isaac Brotman Foundation of the Culver City Hospital.

Except in infants, gas is not normally roentgenographically visualized in the small intestine. Therefore, in perforations of the healthy small intestine, evidence of free intraperitoneal gas is the exception rather than the rule; seldom is there evidence of intraperitoneal air in cases of jejunal and ileal perforation. An exception is retroperitoneal duodenal rupture, in which retroperitoneal air may be seen to outline the psoas muscle shadow. However, free gas may be demonstrated in approximately 80 per cent of patients with perforation of the stomach or the first portion of the duodenum, and in almost all of those with perforation of the colon.[4]

The presence of free blood in the stomach indicates upper abdominal injury. If fresh or darkened blood is seen on rectal examination, intestinal injury is likely.

The leukocyte count becomes rapidly elevated in most instances of intraperitoneal hemorrhage and also in cases of chemical peritonitis from upper gastrointestinal spillage. The erythrocyte count is not dependable as an index of loss of blood. Hemoglobin and hematocrit determinations, as single determinations, are misleading.

All patients with a history of abdominal trauma should be closely observed up to 48 hours, with repeated examinations of the abdomen, pulse, blood pressure, respiration and hemoglobin and leukocyte count. There may be a high coincidence of other severe injuries such as multiple fractures and craniocerebral trauma, with the patient perhaps comatose, or complications such as alcoholic intoxication. Such complications greatly increase the difficulty of evaluating an abdominal lesion requiring immediate operation.

TREATMENT

Surgical treatment is mandatory as soon as the diagnosis is made. The mortality rate increases with lengthening of time between rupture of the bowel and operation. The rate for jejunal perforations is twice that for ileal perforations.

Intestinal decompression and administration of antibiotics should be carried out, together with indicated blood and fluid replacement in preparation of the patient for operation. Spinal anesthesia was the most successful anesthesia in a series reported by Geohegan.[3] At operation, thorough exploration of the abdomen must be carried out even after one perforation is located, for often there are multiple perforations and other intra-abdominal injuries. The perforation in the bowel can be treated by either simple closure or by resection, depending on the extent of the involvement, with anastomosis if necessary. All contaminating material should be washed from the abdomen.

REPORTS OF CASES

Case 1. A 5-year-old boy ran into a parked automobile while running down a hill. This was at about 3:00 p.m. He went home complaining of severe pain in the abdomen. He vomited blood and soon afterward was taken to the office of a physician. The abdomen was rigid but not board-like. There was tenderness across the upper portion. Resonance to percussion over the liver was noted. The patient was admitted to the hospital at 5:30 p.m.

X-ray films of the abdomen showed free gas beneath the domes of the diaphragm. Leukocytes numbered 17,000 per cu. mm.—64 per cent segmented forms, 18 per cent stabs and 18 per cent lymphocytes. The hemoglobin content was 14.4 gms. per 100 cc. Erythrocytes numbered 4.53 million per cu. mm. The body temperature on admission was 98.8° F. and the pulse rate was 100 per minute.

At laparotomy a perforation 1.5 cm. in diameter was found in the jejunum 20 to 25 cm. distal to the ligament of Treitz. The ruptured area was punched out and rounded and allowed free exit of the intestinal contents into the peritoneal cavity. There was a large amount of plastic exudate over the surface of all loops of small bowel. The perforation was repaired, the surrounding area was washed with copious amounts of saline solution and the abdomen was closed. The body temperature was elevated for about a week after operation, then subsided. The patient did well thereafter.

Case 2. A 49-year-old man was struck across the lower abdomen by a piece of 2 x 4 wood that was flipped from the rapidly whirling blade of a power saw. The time of the accident was about 9 a.m. The patient continued to work that morning but went home in the afternoon. There he vomited one to two quarts of black liquid. He had severe aching across the lower abdomen and great aggravation of abdominal pain when he moved. Soon after examination in the office he was admitted to the hospital, at 7:42 p.m. The pulse rate was 120 per minute, and the blood pressure 140/80 mm. of mercury. Board-like rigidity and pronounced tenderness of the entire abdomen were noted. There was decreased dullness to percussion over the liver, bilateral shifting flank dullness and questionable evidence of fluid wave. On auscultation bowel sounds were absent.

X-ray films of the abdomen showed free gas under the domes of the diaphragm.

Leukocytes numbered 11,900 per cu. mm.—80 per cent segmented forms, 15 per cent stabs and 5 per cent lymphocytes. The hemoglobin content was 16.7 gm. per 100 cc. Erythrocytes numbered 5.4 million per cu. mm. The rectal temperature was 100.2° F. Results of urinalysis were within normal limits except for the presence of acetone.

A Miller-Abbott tube was inserted and the patient was taken to surgery. At laparotomy there was a plastic exudate over all loops of the small intestine and a large collection of brownish-green fluid in the pelvis. A perforation 0.5 cm. in diameter with ragged edges was found in the antemesenteric border of the ileum, 25 cm. proximal to the ileocecal valve. The entire small bowel was examined from the ligament of Treitz to the ileocecal area and no other perforations or evidence of trauma were found. The perforation was closed and incidental appendectomy was done. After the abdominal cavity was irrigated with copious amounts of saline solution, the abdomen was closed except for Penrose drains that were brought out through a stab wound. The patient was discharged from the hospital nine days after operation and he was well thereafter.

6010 Wilshire Boulevard, Los Angeles 36.

REFERENCES

1. Cottrell, J. C.: Nonperforative trauma to abdomen, Arch. Surg., 68:241-251, Feb. 1954.
2. Estes, W. L. Jr., Bowman, T. L., and Meilicke, F.: Nonpenetrating abdominal trauma with special reference to lesions of the duodenum and pancreas, Am. J. Surg., 83: 434-452, March 1952.
3. Geohegan, T., Gordon, E. J., and Broch, B. E.: Small intestinal rupture from nonpenetrating abdominal trauma, J. Michigan M. Soc., 54:1223-5, Oct. 1955.
4. Jacobson, G., and Carter, R. A.: Small intestinal rupture due to nonpenetrating abdominal injury; a roentgenologic study, Am. J. Roentgenol., 66:52-64, July 1951.
5. Kirtland, H. B., Jr.: Rupture of the gastrointestinal tract; dealing with lesions caused by nonpenetrating trauma, Calif. Med., 79:434-6, Dec. 1953.
6. Kulowski, J.: Crash Injuries, Charles C. Thomas, Springfield, Ill., 1960.
7. Newing, R.: Rupture of small bowel in association with procidentia, M. J. Australia, 42:701-2, Nov. 26, 1955.
8. Patterson, R., and Bromberg, B.: Abdominal injuries with special reference to errors in early handling, Am. J. Surg., 83:427-433, March 1952.
9. Perelman, H., and Sherwood, H. R.: Injury to the liver in automobile accidents, J.A.M.A., 173:1019-20, July 2, 1960.
10. Poer, D. H., and Woliver, E.: Intestinal and mesenteric injury due to nonpenetrating abdominal trauma, J.A.M.A., 118:11-15, Jan. 3, 1942.
11. Pontius, G. V., Kilbourne, B., and Paul, E.: Nonpenetrating abdominal trauma, Arch. Surg., 72:800-811, May, 1956.
12. Williams, E. R.: Abdominal trauma; rupture of the jejunum and hemopneumothorax following nonpenetrating trauma, J. Kansas M. Assn., 58:446-7, June 1957.

Intravenous Nutrition

A Clinical Evaluation of a 50 Per Cent Dextrose in Water Solution, Containing 1 mg. of Hydrocortisone per 100 ml.

RAYMOND E. WESTON, *M.D., Ph.D.*, and
S. JEROME PORT, *M.D.*, Beverly Hills

• A 50 per cent dextrose in water solution, containing 1 mg. of hydrocortisone per 100 ml., was used successfully in 70 patients for intravenous nutritional maintenance and repletion. There were no adverse systemic effects during or following 216 infusions. The only undesirable local reaction was the rare occurrence of pain in the arm when the concentrated solutions were given too rapidly. Glycosuria was minimal if the infusion rate did not exceed 0.85 gm. of glucose per kilogram of body weight per hour, particularly if 50 units of insulin were added to each 550 ml. bottle of 50 per cent dextrose. In patients without significantly elevated serum potassium content, 30 mEq. of potassium chloride, acetate or phosphate was added to each bottle to prevent hypokalemia.

Preliminary observations suggest that this new solution may be given safely intravenously, without need for cutdowns or plastic catheters, if the needle is carefully inserted and well immobilized in the arm vein and the duration of the infusion is not too prolonged. Further studies on the effect of such high caloric supplementation plus protein hydrolysates in parenteral nutritional repletion and maintenance are indicated.

WITH THE PARENTERAL SOLUTIONS and supplements now available, it is possible to treat, prophylactically or actively, most of the common fluid and electrolyte aberrations. However, the severe malnutrition that complicates acute and chronic illness and is often associated with hyponatremia and intracellular potassium depletion, still presents a therapeutic challenge. The major problem is to provide sufficient calories, in addition to protein hydrolysates and electrolytes, to promote repletion of the depleted tissues without administration of excessive fluid to patients who often are already overhydrated, as Moore has emphasized.[12] Unfortunately, concentrated glucose solutions given by intravenous needle, usually produce severe phlebitis and often thrombosis.[16] Therefore, highly concentrated dextrose solutions have not been given intravenously except, as in patients with acute renal failure, via plastic catheters threaded through extremity veins into the vena cava.[18]

Recently, McNair and Dudley[10] emphasized the dangers of thrombophlebitis following this practice, or of septicemia if there is severe infection elsewhere in the body. Moncrief[11] and Hassall and Rountree[7] reported similar clinical experiences. Bogen[2] recently observed that complications developed at the site of the cutdown in 14.5 per cent of 234 cases.

To provide calories without these hazards, fat emulsions for intravenous administration have been developed. Unfortunately, after a few days even the best of these produce febrile or other systemic reactions.[9,13]

Some of the factors contributing to local phlebitis and thrombosis following intravenous infusions, as well as possible prophylactic measures, were investigated by McNair and Dudley[10] who drew the following conclusions:

1. The infusion site plays a role, since significant phlebitis occurred much more frequently in the long saphenous or other leg veins than in arm veins.

2. Venipuncture *per se* is not important because intravenous needles, carefully inserted and well immobilized in forearm veins for as long as 72 hours, produced negligible local trauma.

3. The pH of the solution is not significant, for heat-sterilized dextrose solutions produced no more venous irritation than did filter-sterilized solutions containing less acid.

4. Local clotting may not be of primary importance, since addition of 200 units of heparin per 100 ml. did not reduce the incidence of thrombophlebitis following experimental infusions of more than 24 hours' duration.

5. Local tissue reaction to prolonged infusion was significantly reduced by adding 1 mg. of hydrocortisone per 100 ml. of solution infused.

Polak[15] had previously reported that three patients in hepatic coma showed no clinical evidence of thrombophlebitis during or following infusions of 20 per cent dextrose solution, containing 1 mg. of hydrocortisone per 100 ml., for 32 to 63½ hours. More recently, he and his colleagues[6] reported that

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From the Department of Medicine, Cedars of Lebanon Hospital, Los Angeles 29.

Submitted June 1, 1960.

TABLE 1.—*Sex and Age Range of Patients*

Sex	Number	Range in Age, Years
Males	33	23 to 84
Females	37	27 to 89

TABLE 2.—*Clinical Data on Patients*

Clinical Diagnoses	Number of Patients
Carcinoma	18
Cardiovascular disease	9
Hepatic disease	9
Blood dyscrasias	8
Uremia	6
Peptic ulcer	6
Ulcerative colitis	5
Renal shut down	2
Miscellaneous	7
Total	70

TABLE 3.—*Frequency of Administration of 50 Per Cent Dextrose and Water Solution with Hydrocortisone*

Number of Administrations	Number of Patients	Number of Bottles
1	26	26
2	15	30
3	9	27
4	7	28
5	3	15
6	4	24
7	1	7
8	1	8
10	1	10
13	1	13
14	2	28
Totals	70	216

TABLE 4.—*Mode of Administration of Infusions*

Mode of Administration	Number of Patients	Number of Infusions
Intravenous needle	53	150
Intravenous catheter	7	30
Cutdown catheter	6	24
Needle or cutdown	4	12*
Total	70	216

*20 Intravenous infusions included in I.V. needle column.

in a larger, well controlled series this concentration of hydrocortisone had no effect on the incidence or severity of the local reaction to intravenous infusions administered for more than 24 hours. The latter observation confirmed the reports of Horwitz, Sachar, and Elman[8] and of Carter[3] that the duration of infusion is of prime importance in the pathogenesis of infusion thrombophlebitis.

The present report is concerned with the use of the anti-inflammatory properties of hydrocortisone to reduce the incidence of infusion phlebitis following administration of concentrated dextrose solutions. The data suggest that a solution of 50 per cent dextrose in water, containing 1 mg. of hydrocortisone per 100 ml.,* may be infused slowly with an intravenous needle, without significant local or systemic reaction. As much as 750 gm. of dextrose per day may be given intravenously in only 1,500 ml. of solution without use of a plastic catheter or venous cutdown.

METHODS AND MATERIALS

Tables 1 and 2 summarize the pertinent clinical and statistical data on 70 subjects. The majority were patients at the Cedars of Lebanon Hospital, but some were seen in consultation at other hospitals in Los Angeles. A total of 216 infusions were given with individual patients receiving from one to fourteen infusions (Table 3). In 53 patients the infusions were administered intravenously with an 18- or 20-gauge needle (Table 4). In seven an in-dwelling polyethylene catheter was threaded through a needle into the vein. In six patients intravenous cutdown was done, generally on a branch of the long saphenous vein. In four patients infusions were given through needles and cutdowns. Thirty-six of the 216 infusions were given through a cutdown or an intravenous catheter.

Although infusions were given more rapidly, at times, to test the patient's subjective and metabolic response to the resulting hyperglycemia, generally the rate was adjusted to provide less than the 0.85 gm. of dextrose per kg. of body weight per hour, which generally may be given to a normal person without producing significant glycosuria.[5] Thus, in four hours a 70 kg. subject would be given 550 ml. of 50 per cent dextrose solution containing 1 mg. of hydrocortisone per 100 ml. Most normal subjects were able to metabolize the 250 gm. of dextrose per bottle with little or no glycosuria. However, to reduce the strain on the beta cells of the islets of Langerhans,[1] 50 units of regular insulin (one unit per 5 gm. of dextrose) usually was added to each 550 ml. bottle. To promote more rapid hepatic deposition of glycogen and potassium in patients with hyperpotassemia, 100 units of regular insulin was added to the first bottle of 50 per cent dextrose solution given each day, and 50 units was added to each subsequent bottle. The total fluid replacement requirements of patients in acute renal failure (estimated from insensible loss plus losses in urine, stool and vomitus) were supplied quantitatively with the concentrated dextrose solution. The 600 to 750 gm. of glucose per day provided sufficient calories to reduce decidedly the breakdown of tissue for energy production.

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*Supplied as Molidex by Don Baxter, Inc., Glendale, California.

To each bottle given to patients without hyperkalemia, 30 mEq. of potassium phosphate, chloride or acetate was added, the specific anion being determined by the patient's clinical requirements. In addition, supplements of vitamin B complex, vitamins K and C, magnesium sulfate and calcium gluconate were given, as indicated.

Many of the surgical or malnourished patients were provided with approximately 2,800 calories per day by the following schedules:

1. An initial four-hour infusion of 550 ml. of 50 per cent dextrose with hydrocortisone, containing 50 units of regular insulin, 30 mEq. of potassium phosphate, plus vitamins.
2. A five-hour infusion of 1,050 ml. of a 10 per cent casein hydrolysate (Hyprotigen®) solution containing 7.5 per cent ethyl alcohol, 1 mg. of hydrocortisone per 100 ml., 33 mEq. of potassium, and 84 mEq. of sodium, with 8.2 mEq. of added magnesium sulfate.
3. A final four-hour infusion of 550 ml. of the first solution, containing 8.2 mEq. of magnesium sulfate and 30 mEq. of potassium chloride or potassium acetate, depending on patient's acid-base requirement.

Whenever possible, infusions were given through needles carefully placed into a large vein in the arm. The site of the infusion was inspected frequently to permit correction of faulty placement of the needle or to note any irritation or thrombosis of the vein or infiltration around the vein. After the last infusion was completed, the needle was carefully withdrawn and light pressure exerted at the site of the puncture for several minutes with the patient's arm elevated and the forearm extended. Alternate arms were used on successive days, the available adequate veins being used in rotation. The patients were carefully observed and examined during and 24 hours after each infusion. Any subjective complaints or objective findings were recorded.

Serum electrolytes, blood sugar, and daily urinary dextrose excretions were determined by standard methods on a number of subjects. Pulse, temperature, and often blood pressure were recorded every four hours during and following most infusions.

RESULTS

A total of 216 infusions were given to the 70 patients (Table 3).

In the 53 patients in whom administration was through a needle, no significant local or systemic reactions were observed. The only complaint recorded (Table 5) was of pain at the site of infusion or along the course of the vein when the infusion rate was too rapid or the vein too small to permit adequate dilution of the decidedly hypertonic solution. In only two instances was the pain severe enough to necessitate discontinuing the infusion. Occasionally, there was some transient soreness at the infusion site. However, in no case did thrombosis or even persistent phlebitis ensue.

TABLE 5.—*Patient Reactions to Infusions*

Patient	Subjective Complaint	Subsequent Thrombosis or Phlebitis
1.	Local pain during 2 of 3 infusions	None
2.	Pain during infusion	None
3.	Pain during infusion	None
4.	Pain radiating to shoulder	None
5.	Initial pain stopped when infusion was slowed	None
6.	Severe pain requiring cessation of infusion into small vein	None
7.	Pain during 1st hour of 1 of 5 infusions	None
8.	Pain during more rapid infusion	None
9.	Local pain during 1 of 14 infusions	None
10.	Severe local pain requiring cessation of infusion	None
11.	Initial pain stopped when infusion was slowed	None
12.	Initial pain stopped when infusion was slowed	None
13.	Pain in arm after one-liter infusion	None

In seven agitated or restless patients, the needle slipped out of the vein with resulting subcutaneous infiltration of the 50 per cent dextrose solution with hydrocortisone. However, no inflammation, infection or slough resulted, the only evidence of local reactions being areas of painless ecchymosis.

In contrast, in three of four 550 ml. intravenous infusions of ordinary 50 per cent dextrose in water solution without hydrocortisone there was local pain, thrombosis and phlebitis which subsided uneventfully but obliterated the affected vein.

In seven patients with in-dwelling polyethylene catheters, and in the ten with intravenous cutdown, phlebitis and thrombosis of the veins ultimately developed. Although the house officers felt the vessels tended to remain open longer than ordinarily in patients receiving the 50 per cent dextrose with hydrocortisone solutions, a much larger series will be needed before such a conclusion can be statistically verified.

Hyperglycemia and Glycosuria

In patients given single slow infusions of 50 per cent dextrose with hydrocortisone solutions without insulin, blood sugar content increased only 70 to 200 mg. per 100 cc. Consequently, only 3 to 16 gm. of dextrose per 24 hours was excreted in the urine. Subsequent infusions produced similar patterns of glycosuria. However, when 50 units of regular insulin was added to each 550 ml. of solution, blood sugar rose less and generally only 2 to 3 gm. of dextrose per day was excreted in the urine even after a number of daily infusions. In patients with either severe hepatic disease or uremia, blood sugar levels tended to be higher, even when insulin was added to the infusion.

TABLE 6.—*Changes in Chemical Contents of Serum and Blood During Treatment of a Uremic Acidotic Hyperkalemic Patient*

Day	Serum Electrolytes (mEq. per liter)				Blood Urea Nitrogen mg. per 100 cc.	Creatinine mg. per 100 cc.	Hemoglobin gm. per 100 cc.
	K	CO_2	Na	Cl			
1 (Pre-treatment)	7.9	10.5	140	117	88	9.7	8.1
2	5.9	15.0	140	112	76	9.5	....
3	4.6	17.0	....	....	....	....	....
4	4.1	25	140	110	62	9.0	9.4

Electrolyte Changes

Continued infusions without added potassium salts, especially with insulin supplements, were associated with decreases in serum potassium. For example, in one malnourished woman the serum potassium fell to 2.7 mEq. after one infusion and rose slowly when 30 mEq. of potassium phosphate was added to each subsequent bottle. No other significant changes in serum electrolytes were noted, probably because appropriate sodium, calcium and magnesium salts were added, as indicated above, for patients who were receiving all their nutrition parenterally.

Uremia with Acidosis and Hyperkalemia

In uremic and other hyperkalemic patients, serum potassium levels fell promptly and progressively following infusions of 50 per cent dextrose with hydrocortisone. Table 4 presents data on a typical patient, a 32-year-old man with uremia resulting from a congenitally fused kidney and chronic pyelonephritis. On admission, he appeared moribund, having severe oliguria, respirations of 65 per minute due to pronounced acidosis, and the blood contents typical of severe uremia, acidosis and hyperkalemia (Table 6). He was given a four-hour infusion of 550 ml. of 50 per cent dextrose in water with hydrocortisone, supplemented with 100 units of regular insulin and 90 mEq. of sodium lactate, followed by an infusion of 1,000 ml. of 10 per cent dextrose in water, supplemented with vitamins B and C, 40 units of regular insulin and 90 mEq. of sodium lactate. By the next morning, serum potassium had fallen from 7.2 to 5.9 mEq. per liter and the carbon dioxide content rose from 10.5 to 15.0 mEq. per liter. That day another liter of the augmented 10 per cent dextrose in water was given, preceded and followed by 550 ml. infusions of the 50 per cent dextrose with hydrocortisone plus insulin and sodium lactate, and the serum electrolyte situation improved further. The next day only one 550 ml. bottle of the concentrated dextrose with hydrocortisone was given, followed by two units of blood and a liter of the augmented 10 per cent dextrose in water solution. By the following day, when the patient was well enough to be discharged home, the electrolyte contents were essentially normal.

Effects of Hydrocortisone

No evidence of any adverse effects of small amounts of hydrocortisone administered were observed in any patients. The largest daily dose was only 21.5 mg. when two bottles of the concentrated dextrose solution and one liter of the supplemented protein hydrolysate solution were given.

CLINICAL RESPONSE

In patients with chronic uremia or acute renal failure, the clinical response was excellent with rapid correction of hyperkalemia and acidosis and lowering of the blood urea nitrogen content. In malnourished patients, even those with metastatic malignant disease, improvement was noted following the increased caloric and nitrogen intake. After five or six days of vigorous parenteral nutrition, many patients regained appetite, began to eat and showed pronounced increase in vigor. No adverse clinical responses were observed.

It should be noted that, although this report deals only with 216 infusions, almost 500 bottles of 50 per cent dextrose with hydrocortisone have been administered at this hospital. The present series includes only those cases in which adequate observations were made. However, no significant reactions other than occasional transitory local soreness have been noted in the larger series. Moreover, the use of the new solution on all the clinical services has been steadily and spontaneously increasing, whenever adequate parenteral nutrition is needed.

DISCUSSION AND CONCLUSIONS

The present data demonstrate that properly prepared 50 per cent dextrose in water solutions, containing 1 mg. of hydrocortisone per 100 ml., may be given intravenously through an ordinary needle at a rate providing 0.85 gm. of dextrose per kg. of body weight per hour, without significant local or systemic reaction. Although limited control studies tend to confirm the widespread clinical impression that similar administration of 50 per cent dextrose solutions without hydrocortisone generally produces decided venous irritation, and often phlebitis or thrombosis or both, a larger control series is necessary to provide statistical support for this conclusion. However, the resulting discomfort and danger to the patients made it difficult to justify the continued use of the control solutions in this study, particularly in view of the therapeutic success being achieved with the solutions containing 0.001 per cent hydrocortisone.

Fortunately, the maximal rate of infusion associated with minimal glycosuria is well tolerated by most patients. However, at times an even slower rate may be required to avert local pain due to the hypertonicity of the solution. To reduce venous irritation, the 20 or 22-gauge needle should be carefully inserted in a large vein in the arm, firmly immobilized, and removed in less than 15 hours. The duration of infusion, particularly, must be carefully controlled, as has been emphasized by many investigators.[3,6,8,10,16]

Despite these limitations of rate and duration of administration, it has been possible, in 13 or 14 hours, to give infusions providing 550 gm. of dextrose, 100 gm. of casein hydrolysate, 75 ml. of ethyl alcohol, 93 mEq. of potassium, 84 mEq. of sodium, and 16.4 mEq. of magnesium in a total volume of 2,150 ml. containing only 21.5 mg. of hydrocortisone. Such parenteral therapy, supplying protein hydrolysate and electrolytes plus 2,800 calories in only 2,150 ml. of solution, will not only adequately maintain well-nourished medical and surgical patients but may also permit repletion of severely malnourished subjects by promoting utilization of the nitrogen administered.

As emphasized by Pareira and Somogyi[14] and Spencer and Beal,[19] improved appetite often follows intravenous administration of sufficient dextrose to correct the ketosis of starvation. This factor plus the increased vigor following partial nutritional repletion may explain the decided improvement in oral intake observed in many patients in the present series after five or six days of adequate parenteral therapy. Wider application of these solutions is required to determine if the anticipated salubrious effect on the morbidity following extensive gastrointestinal operations, trauma, burns, comatose states and other debilitating clinical conditions will be achieved.[12,16,19]

In patients with acute renal failure, infusion of 1,000 to 1,500 ml. of concentrated dextrose with 0.001 per cent hydrocortisone and the proper amount of insulin not only provides sufficient calories for metabolic maintenance, thereby reducing tissue breakdown, but also promotes deposition of potassium with glycogen, thus decreasing hyperkalemia. Preferably, the infusion should be given intermittently, alternating veins from arm to arm. If continuous infusion is needed, a different vein should be used every 12 to 14 hours. As Salisbury[17] recently noted, metabolism in profoundly uremic patients may be so distorted, at times, as to impair utilization of carbohydrate. In these circumstances concentrated dextrose infusions may produce increasing hyperglycemia which is unaffected by concurrent administration of large doses of insulin.

As indicated above, a larger control series will be required to determine whether properly prepared 50 per cent dextrose solutions without hydrocortisone may be given without venous trauma if the precautions described in this study are taken. Spencer and Beal[19] reported that phlebitis was uncommon following infusion of 25 per cent dextrose plus 5 per cent alcohol in water solutions through a 22-gauge needle carefully placed in a vein. They suggested that perhaps the hazard of phlebitis due to infusions of hypertonic dextrose solutions has been overemphasized in the past. However, the absence of significant local reaction to accidental subcutaneous infiltration of the 50 per cent dextrose solutions with hydrocortisone is consistent with the anticipated anti-inflammatory properties of the steroid.[15] It is in striking contrast to the local redness and soreness following subcutaneous infiltration of other solutions without hydrocortisone.[16] The failure of the steroid to reduce the incidence of phlebitis and thrombosis following infusions of more than 24 and 48 hours' duration[6] is not surprising. Under these conditions, the time-intensity factor probably far exceeds the physiological-pharmacological potential of the hydrocortisone.

In conclusion it should be reemphasized that these observations are preliminary. However, the results observed in this and in other[4] clinics suggest that 50 per cent dextrose in water solution, containing 1 mg. of hydrocortisone per 100 ml., may be given intravenously to provide calories in a limited fluid volume. Further studies on the clinical and metabolic effects of such treatment in the management of patients with acute and chronic renal failure, and for nutritional maintenance or repletion of medical patients, as well as surgical patients, preoperatively and postoperatively, are in progress.

435 North Bedford Drive, Beverly Hills (Weston).

REFERENCES

1. Barron, S. S., and State, D.: Effect of prolonged intravenous administration of dextrose on the beta cells of the islets of Langerhans, A.M.A. Arch. Path., 48:297, 1949.

2. Bogen, J. E.: Local complications in 167 patients with indwelling venous catheters, Surg. Gynec. & Obst., 110:112, 1960.

3. Bolton Carter, J. F.: Reduction in thrombophlebitis by limiting duration of intravenous infusions, Lancet, 2:20, 1951.

4. Byrne, H. J.: Personal communication to the authors.

5. Cain, J. C., and Belk, W. P.: The assimilation rate of intravenously injected glucose in hospital patients, Am. J. Med. Sci., 203:359, 1942.

6. Clark, P. B., Polak, A., and Hajna, J.: Clinical trial of hydrocortisone in the prevention of transfusion thrombophlebitis, Postgrad. Med. J., 36:55, 1960.

7. Hassall, J. E., and Rountree, P. M.: Staphylococcal septicemia, Lancet, 1:213, 1959.

8. Horwitz, A., Sachar, L. A., and Elman, R.: An experimental study of phlebitis following venoclysis with glucose and amino acid solutions, J. Lab. & Clin. Med., 28:842, 1943.

9. Krieger, H., Abbott, W. E., Levey, S., and Holden, W. D.: The use of a fat emulsion as a source of calories in patients requiring intravenous alimentation, Gastroenterology, 33:807, 1957.

10. McNair, T. J., and Dudley, H. A. F.: The local complications of intravenous therapy, Lancet, 2:365, 1959.

11. Moncrief, J. A.: Femoral catheters, Ann. Surg., 147: 166, 1950.

12. Moore, F. D.: Common patterns of water and electrolyte change in injury, surgery and disease, New Eng. J. Med., 258:277, 1958.

13. Mueller, J. F.: Experiences in human beings with an improved fat emulsion for intravenous administration, J. Lab. & Clin. Med., 50:257, 1957.

14. Pareira, M. D., and Somogyi, M.: Rationale of parenteral glucose feeding in the postoperative state, Ann. Surg., 127:417, 1948.

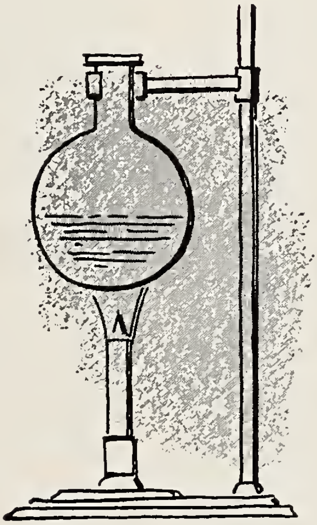
15. Polak, A.: Preliminary communication: Hydrocortisone in the prevention of transfusion thrombophlebitis, Lancet, 1:484, 1956.

16. Rice, C. C., Strickler, J. H., and Erwin, P. D.: Parenteral nutrition with a solution containing one thousand calories per liter, A.M.A. Arch. Surg., 64:20, 1952.

17. Salisbury, P.: Personal communication with the authors.

18. Shaw, G.: Acute renal insufficiency treated by caval infusion of dextrose solutions of high concentration, Lancet, 1:15, 1959.

19. Spencer, F. C., and Beal, J. M.: The use of a solution of 25 per cent glucose and 5 per cent alcohol in parenteral nutrition, Ann. Surg., 135:234, 1952.



Wanted: A Biochemical Test for Schizophrenia

RONALD R. KOEGLER, *M.D.*, EDWARD G. COLBERT, *M.D.*, and SAMUEL EIDUSON, *Ph.D.*, Los Angeles

• Recent discoveries and refinements in technique in the field of biochemistry have led to renewed interest in the idea that a test can be developed for the diagnosis of schizophrenia. Studies directed toward that goal have included investigations of biological amines, carbohydrate metabolism, epinephrine metabolism, serotonin, taraxein and ceruloplasmin. No conclusive evidence of any biochemical abnormality in schizophrenia has been found. Although careful studies in adults have failed to confirm a theory that ceruloplasmin levels are abnormally high in schizophrenia, the surmise that it might be true in schizophrenic children was investigated, since constitutional factors seem to be very important in this condition. Thirty-four schizophrenic children and a control group of 13 "behavior problem" children were investigated. No difference was found between the two groups in serum content of copper, ceruloplasmin or ascorbic acid.

THE IDEA of a single laboratory test that would accurately determine or even strongly suggest a diagnosis of schizophrenia is an attractive one. The quest for such a test has stimulated research in this field for many years, and much worthwhile information about mental illness has been obtained.

The concept of biochemical changes as a cause for schizophrenia has been given a good deal of attention since the early years of the Twentieth Century. In a less sophisticated form it has appeared in many earlier civilizations. The "humors" of the ancient Greeks are prototypes of modern concepts of biochemical forces.

> "As long as the brain is at rest, the man enjoys his reason, but the depravement of the brain arises from phlegm and bile, either of which you may recognize in this manner: Those who are mad from phlegm are quiet, and do not cry out or make a noise; but those from bile are vociferous, malignant, and will not be quiet, but are always doing something improper."
>
> —Hippocrates, *On the Sacred Disease*[13]

In the early 1900's a number of investigators announced the discovery of biochemical abnormalities in schizophrenia, based on their studies of metabolites in the blood and urine. Similar studies were published with varying degrees of enthusiasm in the 20's and 30's. This work was reviewed in some detail by McFarland and Goldstein,[25] and more recently by Kety,[18] all of them concluding that the reported observations were inconsistent and inconclusive. Recent improvements in laboratory techniques have led to renewed interest in schizophrenia as suitable for biochemical research. Present-day biochemical research tends to follow many diverse paths, depending on the hypothesis of the investigator, but several concepts have come to have more than passing attention.

Biological amines

Recently there has been increased interest in hallucinogens that are related to biological amines, and this has turned attention anew to amine metabolism in schizophrenia. New research has been made feasible by the development of paper chromatographic techniques, and a great number of studies of the urine of schizophrenic patients have been reported. Among the reported observations are differences in excretion of aromatic compounds,[26] higher concentrations,[26] presence of abnormal amines[11] and the absence of a normally occurring substance.[9] These conflicting reports have been criticized on the grounds that dietary factors were not controlled and statistical analysis was unsound.[27]

Carbohydrate metabolism

Investigators have reported such varied observations as decreased cerebral blood flow and decreased cerebral glucose consumption,[7] abnormal glucose tolerance[22] and reduction in the blood gluathione index.[23] Other studies have cast doubt on these hypotheses,[5,36] and the concept of such generalized defects in schizophrenia does not seem too attractive to most investigators.

Epinephrine hypothesis

Several studies have purported to show that in schizophrenia there is an abnormal metabolism of epinephrine and that the hallucinogenic properties of such epinephrine derivatives are related to many of the symptoms in schizophrenia.[14,29] Hoffer[14] suggested that adrenochrome or adrenolutin might be the guilty substance. Attempts to confirm these re-

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From the Department of Psychiatry, U.C.L.A. Medical Center (Los Angeles 24); Brentwood Veterans Administration Hospital (Los Angeles); and Camarillo State Hospital (Camarillo, California).

ports in carefully controlled studies have failed.[15,35] The epinephrine hypothesis is an attractive one, but the evidence for it is scant.

Serotonin

The finding of serotonin in the brain and the discovery that lysergic acid diethylamide (LSD) could block the effects of serotonin in smooth muscle[37] led to interest in the possible relationship of serotonin to schizophrenia. Interest was further stimulated by the finding that reserpine causes a decrease in the content of serotonin in the brain.[34] There has been no satisfactory theory that can explain the apparently mutually exclusive findings, let alone relate them to schizophrenia. This is one of the areas in which much current work is being done, and a great deal is being learned about physiologic, pharmacologic and biochemical features of the brain, even if no test for schizophrenia results.

Taraxein

Heath and coworkers at Tulane[20] reported the finding of a substance in the serum of schizophrenic patients, perhaps a form of ceruloplasmin, which they called "taraxein." It was supposedly capable of inducing a schizophrenic-like state when injected into normal volunteers and of causing various changes in laboratory animals. Other investigators have been unable to isolate this mysterious substance.[30]

Ceruloplasmin

Ceruloplasmin is an extremely interesting protein substance. Isolated by Holmberg and Laurell in 1947,[16] and named "ceruloplasmin" because of its deep blue color, it tightly binds almost all the copper in the body. A relative deficiency of ceruloplasmin plays an important role in the etiology of Wilson's disease.[32]

It has been known since 1951 that ceruloplasmin could oxidize p-phenylenediamine as well as other amines.[21] There had been a few reports stating that there was increased ceruloplasmin and copper in the blood of schizophrenic patients[19,28]; however, little interest was shown until a 1957 report by Akerfeldt[3] of an increased oxidation of n.n-dimethyl-p-phenylenediamine by the blood of schizophrenic patients. That report led to a surge of interest in this new "test" for schizophrenia. It was noticed that ascorbic acid levels could affect the results; however, Abood[2] developed a modification which was little affected by ascorbic acid. The first reports tended to confirm the differences in schizophrenia, but recent investigations have failed to show this phenomenon.[4,31]

PRESENT STUDY

We were interested in the relationship of ceruloplasmin levels to schizophrenia. However, one of the problems in doing research in schizophrenia is that there is probably a diversity of etiologic factors. When Bleuler described the "group of schizophrenias," he was referring to just this. Therefore, it is easily possible to overlook abnormalities when the group of schizophrenic persons studied is not sufficiently homogeneous. It is difficult, in our present state of etiologic knowledge of schizophrenia, to determine when we are working with a homogeneous group.

It was our thought that if we took a group of seriously ill patients in which the onset of the disease was at approximately the same age we might have at least a degree of similarity. For this reason we chose to study a group of schizophrenic children in whom definite signs of the disease had developed in the first three years of life. It has been shown that many of these children grow up to be adult schizophrenics of the most regressed type.[6]

Our study group consisted of 34 schizophrenic children and our control group was 13 children with behavior problems. All were in the children's unit of the same state hospital. Blood was drawn from each child and serum copper, ceruloplasmin and ascorbic acid levels determined. The methods of diagnosis are described in detail in a previous publication.[10]

The Abood modification of the Akerfeldt test was used to determine ceruloplasmin levels.[1] Copper in the serum was measured by the Gubler method.[12] The Schaffert and Kingsley technique[33] was used to evaluate ascorbic acid in the serum.

We found no significant difference between the two groups in serum copper, ceruloplasmin or ascorbic acid levels. This is in keeping with McDonald's[24] observation with regard to adult schizophrenics; a high ceruloplasmin level is not characteristic of schizophrenia, and does not occur more frequently in persons with this disease than in normal persons, given an adequate diet and normal ascorbic acid levels. Brown[8] recently noted high ceruloplasmin content in 30 per cent of non-schizophrenic children ill with other diseases.

DISCUSSION

To the extent that the patients studied represented a homogeneous group, the fact that no abnormality of ceruloplasmin levels was observed has some significance. We attempted to divide the group into autistic and non-autistic schizophrenics, according to Kanner's criteria,[17] but this had to be abandoned because the children in the study tended to have some characteristics of both conditions.

However, it is very likely that in some of these very similar children the etiologic factors in the disease were quite varied. In one child genetic factors might be quite important, while in another intense parental rejection and neglect might be paramount. Even though in clinical state the patients were similar to each other at the time of hospital admission, it is plausible that the biochemical patterns differ both quantitatively and qualitatively.

It would seem, then, that we are limited in our search for a biochemical test for schizophrenia by lack of knowledge concerning both the causes and the categories of the condition. Of course there is still hope that by more subtle biochemical techniques or new approaches we may be able to devise a test that will detect chemical changes occurring in all forms of schizophrenia, regardless of the etiologic differences, and not occurring in other diseases. All that we can say at this time is that the determination of serum ceruloplasmin is not such a test.

UCLA School of Medicine, Department of Psychiatry, Los Angeles 24 (Koegler).

REFERENCES

1. Abood, L. G., et al.: A.M.A. Arch. Neur. and Psychiat., 77:643, 1957.

2. Abood, L. G., Gibbs, F. A., Gibbs, E.: A.M.A. Arch. Neurol. Psychiat., 17:643, 1957.

3. Akerfeldt, S.: Science, 125:117, 1957.

4. Aprison, M. H., and Drew, A. L.: Science, 127:758, 1958.

5. Barak, A. J., Humoller, F. L., and Stevens, J. D.: A.M.A. Arch. Neurol. Psychiat., 80:237, 1958.

6. Bender, L.: Childhood schizophrenia, Psychiat. Quart., 27:663-681, 1953.

7. Bowman, K., and Simon, A.: A.M.A. Arch. Neurol. Psychiat., 73:544, 1955.

8. Brown, B.: Serum Akerfeldt test for schizophrenia in children, J. Ped., 51:46-48, July 1957.

9. Cafruny, E. J., and Domino, E. F.: A.M.A. Arch. Neurol. Psychiat., 79:336, 1958.

10. Colbert, E., Koegler, R., and Markham, C.: Vestibular dysfunction in childhood schizophrenia, Arch. Gen. Psychiat., 1:600-617, Dec. 1959.

11. Georgi, F., Honegger, C. G., Jordon, D., Rieder, H. P., and Rottenberg, M.: Klin. Wochschr., 34:799, 1956.

12. Gubler, J. C., et al.: Biol. Chem., 196:215, 1954.

13. Hippocrates: On the sacred disease, Great Books of the Western World, 10:159, Encyclopaedia Britannica, 1952.

14. Hoffer, A., and Kenyon, M.: A.M.A. Arch. Neurol. Psychiat., 76:444, 1956.

15. Holland, B., Cohen, G., Goldenberg, M., Sha, J., and Leifer, L.: Federation Proc., 17:378, 1958.

16. Holmberg C. G., and Laurell, C. B.: Scand. J. Clin. & Lab. Invest., 3:103, 1951.

17. Kanner, L.: Autistic disturbances of affective contact, Nerv. Child., 2:217-250, 1943.

18. Kety, S.: Biochemical theories of schizophrenia, Science, 129:1528-32, and 129:1590-96, 1959.

19. Keup, W.: Monatsschr. Psychiat. Neurol., 128:56, 1954.

20. Leach, B. E., Cohen, M., Heath, R. C., and Martens, S.: A.M.A. Arch. Neurol. Psychiat., 76:635, 1956.

21. Leach, B. E., and Heath, R. G.: A.M.A. Arch. Neurol. Psychiat., 75:444, 1956.

22. Longo, V., Buscaino, G. A., D'Andrea, F., Uras, A., Ferrari, E., Rinaldi, F., and Pasolini, F.: Acta Neurol. (Naples), Quad. III:21, 1953.

23. McDonald, R. K.: J. Chronic Diseases, 8:366, 1958.

24. McDonald, R. K.: Plasma ceruloplasmin and ascorbic acid levels in schizophrenia, paper presented at the annual meeting of the Amer. Psychiat. Assn., Chicago, Ill., 1957.

25. McFarland, R. A., and Goldstein, H.: Am. J. Psychiat., 95:509, 1938.

26. McGeer, E. G., Brown, W. T., McGeer, P. L.: J. Nerv. Ment. Dis., 125:176, 1957.

27. Mann, J. D., and Labrosse, E. H.: A.M.A. Arch. Genl. Psychiat., in press.

28. Markowitz, H., Gubler, C. J., Mahoney, J. P., Cartwright, G. E., and Wintrobe, M. M.: J. Clin. Invest., 34:1498, 1955.

29. Osmond, H.: Dis. of Nerv. Sys., 16:101, 1955.

30. Robins, E., Smith, K., and Lowe, I. P., in "Neuropharmacology," Trans. Josiah Macy, Jr. Foundation, 4th Conf., 1957.

31. Scheinberg, I. H., Morell, A. G., Harris, R. S., and Berger, A.: Science, 126:925, 1957.

32. Schemberg, I. H. et al.: Some aspects of the relation of ceruloplasmin to Wilson's disease, Neurology, 8:44-51, April 1958.

33. Schaffert, R. R., and Kingsley, G. R.: J. Biol. Chem., 212:59, 1955.

34. Shore, P. A., Pletscher, A., Tomich, E. G., Carlsson, A., Kuntzman, R. and Brodie, B. B.: Ann. N.Y. Acad. Sci., 66:609, 1957.

35. Szara, S., Axelrod, J., and Perlin, S.: Am. J. Psychiat., 115:162, 1958.

36. Wilson, W. P., Schieve, J. F. and Scheinberg, P.: A.M.A. Arch. Neurol. Psychiat., 68:651, 1952.

37. Woolley, D. W., and Shaw, E.: Science, 119:587, 1954.

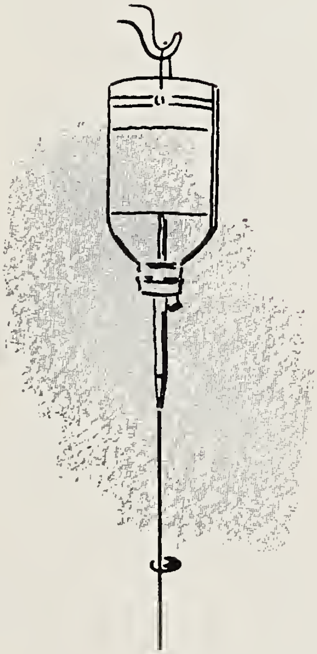
DISCUSSION by ALLEN J. ENELOW, M.D., Los Angeles

The authors have made an excellent and comprehensive review of the present status of biochemical research in the heterogeneous group of patients called schizophrenics. However, the title of their paper implies a specific disease—even though the authors express their doubt about there being a specific disease, schizophrenia, in their paper. When I think of the term *schizophrenia,* I get a certain picture in my mind. I really doubt that this picture is exactly the same as the one any other psychiatrist gets when he thinks of schizophrenia. If we were to attempt to settle these differences by coming to some agreement on what he and I consider to be crucial to the diagnosis of schizophrenia, we might or might not be able to do so. But even if we could do so, there would still be a sizable group of patients which one of us and not the other would want to call schizophrenic.

This statement seems to me to describe the dilemma of the investigator who wants to study schizophrenia. The authors have gotten around this to some extent by limiting their study to a group of children who became seriously psychotically ill at an early age. As it happens, they got negative results. But, even if they had gotten positive results, nothing would have been done to resolve the dilemma of psychiatry today about the serious psychotic illnesses, whatever we call them.

I propose that the term schizophrenia is a disadvantage to the investigator. It might be more fruitful to stop looking for similarities in this large and ill-defined group of patients and begin to look for differences. This possibility did not escape the authors who in fact state that even though the clinical pictures of their subjects were similar, it is plausible that there might be considerable differences in the biochemical picture. I believe it unlikely that chemical changes or any other kinds of changes will be turned up which occur in all patients currently labeled schizophrenic. I feel, rather, that the most fruitful approach to this problem would be to study, from as many different avenues of approach as possible, the differences between all of these patients who are now called schizophrenics. Such studies should be biochemical, behavioral, and sociological. Many such studies are going on, of course, as the authors mention. But there is a tendency to pay lip-service to the ill-defined nature of this group of patients and then act as though there were, in fact, such a disease.

My own particular notion about so-called schizophrenic symptoms is that they are a non-specific group of symptoms—a sort of final common pathway, as it were, for a variety of disturbances. The underlying disorder may have a fairly good prognosis in some instances, and a grim one in other instances. Some of these disorders may turn out to be curable, others not. Some may even be preventable, when we know more about them. But the group of symptoms which currently lead to the diagnosis (often disputed) of schizophrenia may well be as non-specific as fever, flushing, chills and headache.



Casts of the Vagina as a Means of Evaluating Structural Changes and Treatment

KENNETH F. MORGAN, JR., *M.D.*, Los Angeles

• A method of making three-dimensional molds of the vagina with the materials used by dentists for oral impressions gives considerably more information about normal and abnormal anatomic features than other methods of study, including direct viewing, palpation and contrast x-ray studies. The molds are of value in the demonstration of anatomic patterns in relation to normal and abnormal functions, in evaluation of surgical and other therapeutic techniques, in teaching, and in explaining the abnormalities and the aims of treatment to patients.

The use of such molds is being applied to the study of pelvic prolapse, urinary stress incontinence, sexual function of the vagina and birth injuries.

ACCURATE TREATMENT of pathologic structural changes of the vagina and its pelvic environs and supports requires a determination of physiologic and anatomic conditions in individual patients for purposes of comparison with what is known of physiologic norms. The present report is of a method of making casts of the shape of the vaginal vault to determine general norms and the departures from normal in disease states. Made serially over a period of treatment, the casts are a useful record of progressive changes by which the effectiveness of therapy can be evaluated.

Current concepts of vaginal anatomy have been arrived at by the classical methods of the anatomist —examination of living subjects, dissection of cadavers, x-ray visualization and histological techniques. Vaginal surgical procedures have been based on observation of anatomic structure with the patient in the lithotomy or supine position and on trial and error, with emphasis on fasciae and ligaments. Sexual physiology of the vagina and its relationship to fertility, to general pelvic function and to female psychology is clouded. The exact mechanisms of urinary control remain illusive and subject to considerable controversy.

Studies by several investigators who gave primary consideration to function have somewhat modified anatomic concepts. Dickinson made careful measurements and drawings from a large number of patients, correlated them with histories and reported them in his atlas published in 1933.[1] He attempted the taking of vaginal impressions on wax cylinders in order to demonstrate muscular patterns. Van de Velde,[10] through careful examination and history-taking, made contributions toward true understanding of sexual function in women. Kegel,[2-9] in his 30-year study of the pubococcygeus muscle, further advanced the knowledge of vaginal and pelvic anatomy in relation to function.

The research here reported was done with Dr. Arnold Kegel, emeritus professor of gynecology at the University of Southern California. It was carried out in the pelvic relaxation clinic at the Los Angeles County General Hospital. Our interest in the physiology of the pelvis as a neuromuscular unit, and in particular the pubococcygeus muscle system and vagina, led to a search for a better method of studying the anatomic features and pathologic variations of the vagina in living subjects. We needed a way to show the actual effect of pubococcygeus muscle exercise in simple pelvic relaxations and urinary stress incontinence, to clearly demonstrate the kinds of injury to the vagina occurring at the time of delivery in order to correlate these injuries with their far-reaching consequences, and to evaluate plastic surgical procedures in the vagina.

Heretofore, findings have been reported in terms of clinical impressions, the patient's reports and perineometric readings.

Our first attempts at making molds of the vagina fortunately coincided with the development of a new material for taking impressions in the oral cavity. It is a powder which forms a rather thick paste when mixed with water. The paste solidifies in about two minutes, forming a resilient, rubbery mold which records detail with extreme accuracy. The material is chemically inert in the vagina and soft enough to permit removal without injury to the patient. The cast obtained is an accurate three-dimensional negative.

From the Department of Gynecology, University of Southern California, Los Angeles 33.

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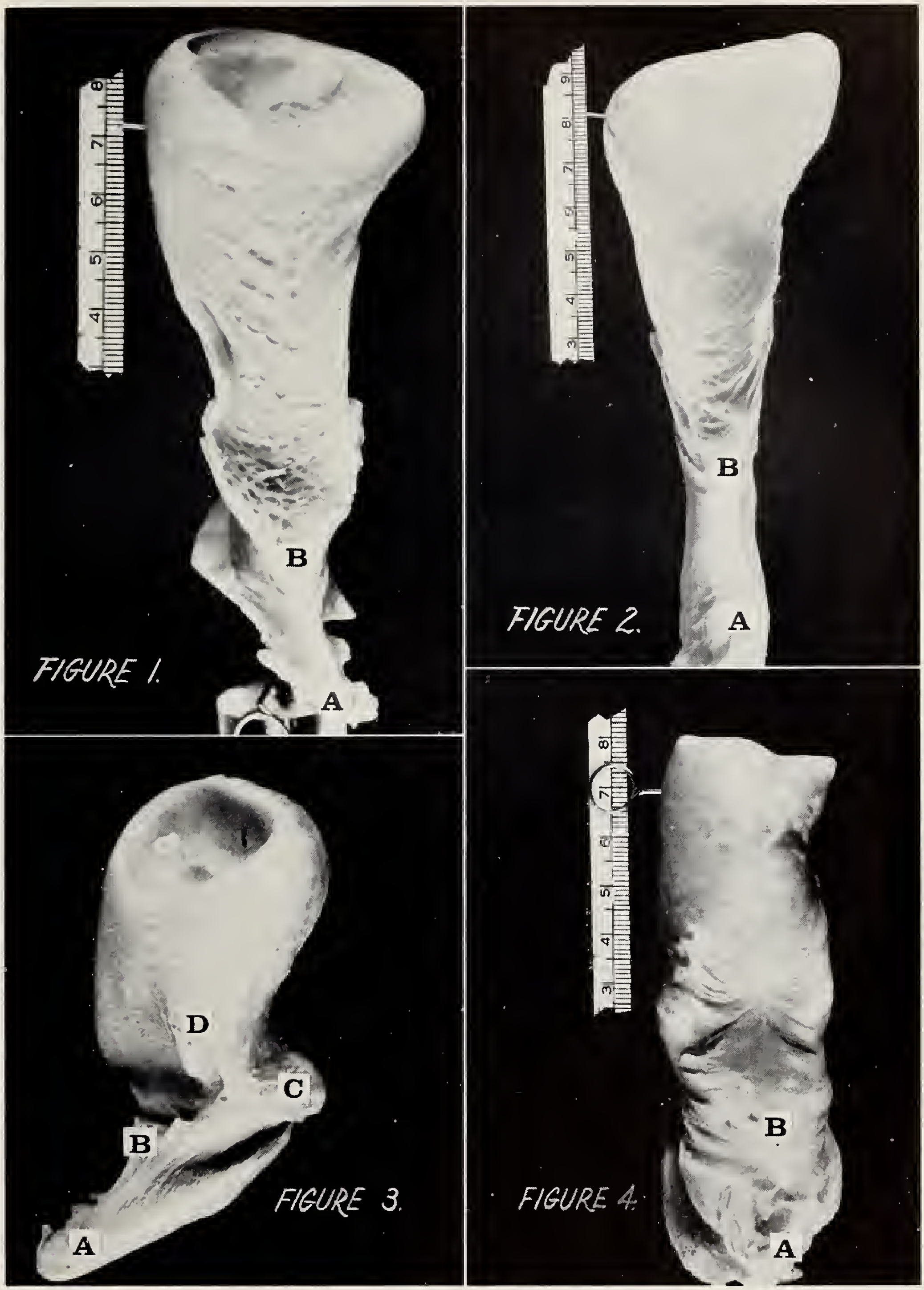


Plate I.—A, Clitoris; B, urethral meatus; C, indication of defect in pubococcygeus muscle; D, indication of scars running to the bladder base. The scales shown are in centimeters. *Figure 1:* Mold of normal vagina, showing symmetrical rugal pattern, muscular constriction of long middle segment and the cervical impression in the wide upper third of the vagina where muscular support is absent. *Figure 2:* Three months after vaginal hysterectomy and anterior and posterior repair. All pelvic functions in the patient were normal. *Figure 3:* Mold of a patient with left mediolateral episiotomy injury, showing indication of a defect in the pubococcygeus muscle and scar tissue running to the region of the bladder base (which caused urinary stress incontinence). The muscular segment is shorter than in a normal vagina. *Figure 4:* The mold shows scarring, distortion and complete loss of rugal pattern (following vaginal hysterectomy and anterior and posterior repair). The patient had urinary incontinence. The muscular segment is replaced by rigid scar tissue and the vaginal vault narrowed.

TECHNIQUE

The procedure is carried out as follows: After the vagina has been lubricated, the casting material is mixed according to directions and is then drawn into an injector made of a ⅞-inch polyethylene tube with lucite plunger and a rubber washer. The mixture is deposited in the vagina by inserting the injector to the vaginal vault and withdrawing the tube while holding the plunger stationary, care being taken not to force the paste lest pressure change the shape of the organ. While a pad is held against the vaginal orifice just firmly enough to prevent escape of the paste, the patient is put into whatever position is suitable for purposes of the examination—lithotomy, standing, sitting or prone—and is kept in that position for the two minutes necessary for the paste to solidify. Usually the cast is easily removed by pulling gently on it as the patient bears down. But if it is not readily delivered, perhaps owing to a large vault and narrow introitus, the cast can be broken up or can be pushed out by pressure applied rectally.

After inspection photographs are made for permanent records to attach to the patient's chart. Since the casting material shrinks as it dries, the casts themselves are useless as permanent records and should be discarded.

An unexpected advantage that became apparent in the course of our experiments is that it is very simple to make molds with the patient standing. Since this is the position of maximum stress, these molds were more informative than those that were made with the patient in the usual lithotomy position. In normal patients we found no difference between molds made in the lithotomy position and those with the patient standing, but in abnormal situations all degrees of sagging and distortion were shown in casts made with the patient standing.

The molds are a valuable aid in teaching detailed examination of the vagina. After a student examines a patient, a mold is made for him to study, and he then reexamines the patient with the advantage of having seen what he is expected to palpate.

Giving instructions and explanations to a patient is made much easier if she can be shown the differences between a mold of her vagina and one of a normal vagina. The reasons for contemplated surgical procedures can be demonstrated clearly. Letting a patient know that molds will be made from time to time to show the progress of therapy can be a valuable inducement to full cooperation.

2010 Wilshire Boulevard, Los Angeles 57.

REFERENCES

1. Dickinson, R. L.: Atlas of Human Sex Anatomy, Williams and Wilkins, 1949.

2. Kegel, A. H.: The nonsurgical treatment of genital relaxation, Ann. West. Med. & Surg., 2:213, 1948.

3. Kegel, A. H.: Progressive resistance exercise in the functional restoration of the perineal muscles, Am. J. Obst. & Gynec., 56:238, 1948.

4. Kegel, A. H.: The physiologic treatment of poor tone and function of the genital muscles and of urinary stress incontinence, West. J. Surg., 57:527, 1949.

5. Kegel, A. H.: Treatment of Stress Incontinence of Urine. In Meigs, J. V., and Sturgis, S. H. (Eds.): Progress in Gynecology, New York, Grune, 1950.

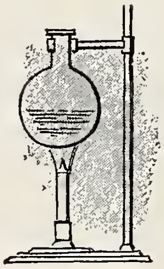
6. Kegel, A. H.: Physiologic therapy for urinary stress incontinence, J.A.M.A., 146:915, 1951.

7. Kegel, A. H.: Stress incontinence and genital relaxation, Ciba Clinical Symposia, 4:35, 1952.

8. Kegel, A. H.: Sexual functions of the pubococcygeus muscle, West. J. Surg., 60:521, 1952.

9. Kegel, A. H.: Pathologic Physiology of the Pubococcygeus Muscle, Motion picture, 1957. Author's library.

10. Van de Velde, T. H.: Ideal Marriage, Random House, 1930.



Industrial Visual Screening

Advantages and Disadvantages of Various Instruments

BYRON H. DEMOREST, *M.D.*, and JOHN A. BERG, *M.D.*, Sacramento

• The ideal test for visual screening is one which is easily performed by a technician with limited training, inexpensive and not time-consuming, easily understandable by all applicants, and one which will correspond generally with a more thorough examination by an ophthalmologist. The ideal screening technique should test accurately those functions needed for any particular occupation. The visual screeners now in great preponderance have certain advantages for ease and are generally acceptable for approximating the visual acuity. Visual screeners do not accurately test the astigmatic applicant, and they have not proven their value in testing depth perception and color vision. The use of the Harrington Flocks Screener is recommended for testing the visual field. The use of the Verhoeff Steropter for depth perception and the American Optical pseudoisochromatic plates for color testing is recommended when these tests are needed.

The old Snellen test cards, or the projector chart for measuring distance vision, and the test cards for measuring near vision are often much more reliable than are the visual screeners.

The determination of the visual status of job applicants is now looked upon as one of the most important items in the pre-employment physical examination. Many investigators[2,4,12,13,14] have stressed the merits of examining the eyes of prospective employees and have suggested that industrial workers should have visual screening at regular intervals throughout their working years. For many jobs, sharp eyesight is a prerequisite. In others, if there is an industrial accident or question of loss of vision from any industrial situation, the value of having a visual base line is great. Follow-up examinations during the span of employment are important to both the employee and the employer. These examinations serve to protect the employee from accidents due to visual impairment, and their value in preventative medicine should not be underestimated.

Eye problems of industry are so prevalent that there are now a number of ophthalmologists who devote the greater part of their practice time to industry. Kuhn[10] has written an excellent book on the subject—*Eyes and Industry*, which should be consulted by anyone planning to establish an industrial visual program.

Not industrial ophthalmologists primarily, the authors of this communication had their interest in the problems of visual screening brought to a focus about two years ago when Dr. Christopher Leggo, Medical Director for the State of California Personnel Board, became involved in establishing visual standards for state employees. His problems were identical to those of any large industrial situation where a great diversity of job classifications exist. Basically the main problems were: Establishing visual standards for the various classes of employees, selecting the tests for measuring visual functions and selection and training of personnel to apply the tests.

This paper will be predominantly concerned with the selection of tests for visual function and the limitations of some of the testing equipment.

When selecting equipment for measuring vision, the examiner should first carefully consider the classes of job applicants and the various visual categories into which they fall. How thorough an eye examination must be certainly depends upon the needs of each position. Cooper[4] wrote an excellent review of rationales for the classification of subjects visually, and suggested means of categorizing employees. Generally these categories are three:

1. General classes of employees. These include most office workers, etc.
2. Special classes in which a high visual standard is required. These include security positions or those in which particularly fine visual skills are needed to operate special equipment.
3. Special classes in which very poor vision is tolerable.

The visual functions which might need testing are the following: Central visual acuity at distance; central visual acuity at near; the visual field; color discrimination (not needed for most); depth perception (need limited to a very few select applicants); refraction, tonometry, and check for progressive ocular disease.

A trained technician is easily able to record results of testing for the first five requirements. However, the industrial ophthalmologist is needed for

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more complete examinations and he should be available, when necessary, to interpret the tests done by technicians. One ever-present problem in vision screening is that applicants are all too frequently given false impressions by a technician who overzealously wishes to impress with scientific knowledge. A visual screening program should never be acknowledged as an eye examination, and in fact effort should be made to keep the applicant from getting such an impression. If the technician is properly instructed to record but not to interpret visual function, such problems do not usually arise.

Various instruments are used in the measurement of certain visual skills:

Distant Vision

In general three methods are available for the evaluation of distant vision. These are the wall chart, using Snellen figures, the projecto-chart, using Snellen figures, and the various screening tests that employ test patterns and letters.

Snellen Letter Wall Chart: This chart is made up of rows of letters of different size, marked with the number of feet at which distance each line should normally be read. In spite of certain weaknesses, this method has survived for almost 80 years, and all other means for the evaluation of distant acuity use the Snellen letter as a standard.

The advantages of this technique are that it is inexpensive and readily available. It is usually accurate enough to meet the needs for the casual examination of most job applicants. To date there is no readily available device that might replace its general use.

The disadvantages of the wall chart are: The letters may be easily memorized, and there are schools in this country where such charts are committed to memory. In practice the examiner must allow a 20-foot space for proper use, the lighting should be standard, and the extraneous interferences should be limited. The chart needs to be kept clean, and occasionally replaced. The technician must be instructed to prevent cheating by the applicant. Testing with this chart may be augmented by the use of the Lebensohn Unmemorizable Chart.

The Projector Chart: For charts projected onto a screen for the subject to read, the time-honored Snellen system is used, but the letters presented may be altered, thus preventing memorization. The disadvantages are the need for the proper set-up for projection and the careful training of an operator to use the apparatus correctly. This device is used by most ophthalmologists.

The Visual Screeners: Several large and impressive pieces of equipment are available for screening the vision of job applicants. The more commonly recognized screeners are the sight screener, manufactured by the American Optical Company, the Orthorater, by the Bausch & Lomb Optical Company, the Telebinocular by the Keystone View Company, and the Vision Tester by the Titmus Optical Company. Each of them presents a very impressive battery of tests, and it is easy to gain the impression that any of the procedures is a complete analysis of visual function. This is far from the case. It should be stated, however, that research work in the mechanics of vision testing is continuing, and we can expect modifications or alterations in some, if not all, of the instruments now available.

These visual screeners may be recommended with certain reservations. The advantages are that distant vision may be fairly accurately tested in a limited space, the test is easily done by a technician, and it is made under standard conditions. In addition the test is so arranged that the applicant cannot cheat, and the results can be determined quickly.

One disadvantage is that persons with very poor vision due to astigmatism may be able to do well on a screener; and recently valid cases have been reported in which subjects with myopia have done better on the visual screener test than they do with the standard wall tests for distance. In addition the screeners cost much more than wall charts. If the screener is used with these reservations, and if the results do not need to be absolutely accurate, it is acceptable as a distance vision test for industry.

Near Vision

The test for near central acuity may be done in two ways, either with the various near testing cards and charts or with a visual screener. The use of a near test card is excellent if the test is done correctly, which is not difficult even for a person with limited experience. It must be done with a clean card and the card should be unmemorizable.

Visual screeners, when used for testing near vision, have many of the advantages and disadvantages that they have in tests for distant vision.

The Visual Field

The third most important aspect of the visual status is the visual field. This particular function is not tested by means of standard equipment on any of the industrial visual screeners now in existence, and hence the value of this function has been all too often overlooked. The peripheral vision is essential for the proper driving of a motor vehicle, a fact that has received attention from the Motor Vehicle Department in California[1] and probably will receive more. If a person's field of vision is narrowed to 40 degrees rather than the normal binocular 180 degrees, driving might be extremely hazardous. The most accurate determination of the visual field is through use of the perimeter and the central tangent screen. In recent years, however, Harrington and Flocks[6] have presented an entirely new instrument which has obvious advantages in industry, for the detection of gross visual field defects. New models are now being perfected[5] which will make the screener less liable to "false positives" results and also make the use of the screener more simple in operation.

Depth Perception

The old Howard Dohlman test that was widely used in the armed forces during World War II has been largely abandoned because of its inaccuracy. The more recent compact Verhoeff Steropter provides a simple test which is preferred by the armed forces and ophthalmologists alike. This test is inexpensive, simply done and foolproof; and in the *few* cases in which stereopsis is vital to the performance of any given occupation, this test is highly recommended.

It must be emphasized that depth perception, or stereopsis, is usually not at all important in the majority of job situations. Kirshberg[9] found no relationship between depth perception and flying ability, as shown by an analysis of data gathered on graduates from the pilot training program of the British Commonwealth Air Training Plan during the last war. Cibis[3] said that linear perspective is much more reliable than depth perception in flying and landing airplanes. A similar situation exists in operating automobiles and other moving machinery.

The loss of depth perception due to amblyopia is therefore all too often over-emphasized, for most persons compensate for this loss. Leggo,[11] in emphasizing the need for employment of one-eyed patients, stresses the unimportance of binocular depth perception.

The use of the various vision screening devices to test depth perception has not been successful, and their use to check this particular function is contraindicated. This has been discussed by Hogan.[7]

Color Discrimination

When indicated, color discrimination is best tested by the Ishahara test, or, as it is more commonly called in this country, the A-O pseudo-isochromatic color test. Uniform lighting conditions and an understanding of the test by the applicant are important. The visual screeners have not been useful in evaluating this facility. Again, color discrimination is not always of vital importance.

2901 Capitol Avenue, Sacramento 16 (Demorest).

REFERENCES

1. Ball, K., and Williams, F.: Personal communication, Nov. 1959.

2. Casanovas, J.: Determination of visual aptitudes in industry, Arch. Soc. Oftal Hispano-am., 13:463-476, May 1953.

3. Cibis, P. A.: Problems of depth perception in monocular and binocular flying, J. Aviation Med., 23:612-622, 1952.

4. Cooper, E. D.: A method for classifying employees for selective placement, Trans. Amer. Acad. Ophth. and Otolaryng., 51:135-139, Jan.-Feb. 1946.

5. Flocks, M.: Personal communication, Nov. 1959.

6. Harrington, D. O., and Flocks, M.: Visual field examination by a new tachistoscopic multiple pattern method, Am. J. Ophth., 37:719, May 1954.

7. Hogan, M. J.: Evaluation of vision screening methods in industry, Arch. Indust. Health, 16:93-99, Aug. 1957.

8. Kahler, A. R.: Unpublished data, Oct. 1959.

9. Kirshberg, L. S.: Depth perception and flying ability, Arch. Ophth., 36:155-170, Aug. 1946.

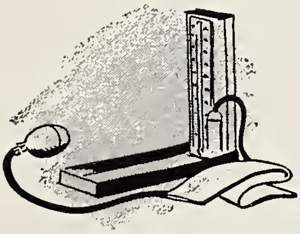
10. Kuhn, H. S.: Eyes and Industry, C. V. Mosby Co., St. Louis, 1950.

11. Leggo, C.: A second look at one-eyed applicants and employees, Indust. Med. and Surg., 24:473-476, Nov. 1955.

12. Minton, J.: Ophthalmic problems and visual standards in industry, Brit. J. Ophth., 30:298-303, May 1956.

13. Randolph, W. L.: Vision in industry, Am. J. Ophth., 36:1737-1738, Dec. 1953.

14. Tiffen, J., and Wirt, S. W.: Determining visual standards for industrial jobs by selected methods, Trans. Amer. Acad. Ophth. and Otolaryng., 50:72-93, Nov.-Dec. 1945.



CASE REPORTS

Volvulus and Gangrene of the Cecum in a Patient with Ulcerative Colitis

HAROLD MASTERS, M.D., Beverly Hills

THE SURGICAL COMPLICATIONS of ulcerative colitis are numerous and varied in nature. Instances have been reported of abscess,[1] peritonitis,[1] fistulae,[2] perforation,[3] hemorrhage[4] and stenosis.[5] A report of a case in which gangrene of the cecum also developed is presented here both because of its rarity and because it points up the necessity of constant observation in cases of ulcerative colitis.

REPORT OF A CASE

The patient, a 66-year-old white woman who had been receiving therapy for ulcerative colitis for some seven years was examined because of sudden onset of severe cramping pain in the lower abdomen about two hours after she had eaten lunch. She felt nauseated but had not vomited.

The patient appeared to be acutely ill and dehydrated. The pulse rate was 100, and the blood pressure was 120/60 mm. of mercury. The rectal temperature was 101° F.

The abdomen was decidedly distended and exquisite tenderness to palpation was noted throughout the entire abdominal wall. No peristalsis could be heard.

Leukocytes numbered 50,600 per cubic millimeter —with neutrophils 94 per cent (10 per cent stab forms) and lymphocytes 4 per cent. The hemoglobin content was 14 grams per 100 cc. and erythrocytes numbered five million per cubic millimeter. The results of urinalysis were within normal limits.

X-ray films of the abdomen showed a pronounced distention of intestinal loops. The impression was that the involved dilated loops were those of the terminal small intestine and ascending colon. No gas pattern could be made out in the areas of the descending colon or rectum. The roentgenographic diagnosis was intestinal obstruction involving the terminal small bowel and ascending colon. The possibility of a volvulus was considered.

During the seven years the patient had been under treatment for ulcerative colitis (therapy consisting of special diets and supportive care) she occasionally had had episodes of bloody diarrhea which abated rapidly. At no time had the possibility of surgical intervention been considered, the general health of the patient having continued to be good.

Laparotomy was performed approximately two hours after the onset of symptoms. A right pararectus incision was made and a tremendously dilated cecum came immediately into view. There were extensive gangrenous changes throughout the entire cecal wall. The inferior pole of the cecum was adherent to the pelvic floor in the hollow of the sacrum. Complete volvulus of the cecum and terminal 12 inches of ileum had occurred, with the fixed adherent cecal wall acting as a point of rotation for the volvulus. The small bowel proximal to the volvulus was only moderately distended. The ascending colon above the volvulus was flat and completely collapsed. Apparently, small bowel content was entering into the cecum and was prevented from flowing into the ascending colon by the volvulus. Furthermore, the ileocecal valve was obviously competent and the intestinal content could not escape backward into the terminal ileum. As a result, the cecum had become progressively more distended, with resultant vascular changes in the cecal wall. The cecum was easily separated by finger dissection from its point of adherence on the pelvic floor. When the cecum was freed, there was an immediate resolution of the volvulus, and the ascending colon filled with gas and intestinal content. The terminal ileum was viable. However, as the gangrenous changes in the cecum were irreversible, the cecum was resected. An end-to-end anastomosis was then made between the terminal ileum and the ascending colon.

Pathologist's Report

Extensive gangrenous changes were found throughout the cecal wall. No definite evidence of perforation was seen externally. However, an indurated area approximately 2 cm. in diameter was present in the area of the wall which had been found to be adherent to the pelvic floor at operation. Here again, no definite point of perforation was seen. However, the tissue was decidedly indurated and friable. When the cecum was opened, an ulcer crater was seen in the mucosal wall corresponding to the above described area on the outside of the cecal wall. The ulcer was approximately 1 cm. in diameter and 2 to 3 mm. deep. The floor of the ulcer was gray and the edges appeared to be undermined. Ad-

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Submitted June 6, 1960.

jacent to the ulcer and throughout the mucosa of the cecum were multiple elevated grayish plaques with innumerable small ulcerations between them.

Microscopic sections through the cecal ulcer showed that the mucosal epithelium terminated rather acutely and was replaced by an ulcer floor consisting of collections of polymorphonuclear leukocytes. The cecal wall was almost completely destroyed. The inflammatory cells extended directly to the serosa. There was no muscularis or mucosal layer. A thin fibrinal purulent exudate came from the serosa. Sections throughout the remainder of the cecal wall showed similar small ulcerations of lesser severity. The pathological diagnosis was ulcerative colitis with gangrene of the cecum.

SUMMARY

A unique case of gangrene of the cecum owing to volvulus, in a patient who had ulcerative colitis, is presented. Bowel resection was necessary. The case draws attention anew to the necessity for careful observation for complications in patients with ulcerative colitis.

435 North Roxbury Drive, Beverly Hills.

REFERENCES

1. Bosseler, A.: Intramural abscess of colon wall, Am. J. Gastroenterol., 21:200, 204, March 1954.

2. Brasfield, R. D.: Gastrocolic fistula due to ulcerative colitis, N. Y. State J. M., 59 (12), p. 2430-1, June 11, 1959.

3. Epstein, C. B.: Perforation of colon, Am. Surg., 140: 872, 874, Dec. 1954.

4. Hightower, N. C., Jr., Broders, A. C., Jr., Haines, R. D., McKenney, J. F., and Sommer, A. W.: Chronic ulcerative colitis II—Complications, Am. J. Digest. Dis., 3:861-876, Nov. 1958.

5. Tidrick, R. T., and Hickey, R. C.: The catastrophic complications of ulcerative colitis: Cancer, perforation and massive bleeding, J. Iowa State Med. Soc., 46:485-492, Sept. 1956.

Tuberculosis of the Duodenum

JOHN S. JACHNA, M.D., HYMAN PECK, M.D., and
JAMES G. DAVIS, M.D., Los Angeles

THE INCIDENCE OF TUBERCULOSIS in all forms has decreased since the advent of drugs specific for the disease, and tuberculosis of the duodenum is now more than ever a rarity. Matthews, Delaney, and Dragstedt[4] cited a report by Paerry and Shaw in 1894 that only 11 cases of duodenal tuberculosis were noted in a review of 17,652 autopsies that had been done at Guys Hospital over the previous 66-year period. They also cited Fenwick and Dodwell who in 1892 reported 500 cases of intestinal tuberculosis in 2,000 autopsies of patients with pulmonary tuberculosis, only 17 of the 500 having duodenal tuberculosis. Also quoted was Gossmann, who in 1913 noted five cases of duodenal tuberculosis in reviewing 2,360 autopsies of patients with tuberculosis. In the same communication in which they cited these reports, Matthews and co-workers added reports of 18 cases of duodenal tuberculosis, making 123 cases that had been reported in the literature up to 1932.

In 1931, Good (cited by Ostrum[6]) reported an incidence of 0.34 per cent of gastric tuberculosis in autopsies and gastric resections at the Mayo Clinic. Reeves[7] reported a case of tuberculosis of the duodenal bulb in 1931. In the Case Records of the Massachusetts General Hospital in 1942, Mallory[3] reported a tuberculous ulcer in the third portion of the duodenum, communicating with a retroperitoneal abscess cavity, associated with miliary tuberculosis. Migliaccio[5] in 1946 reported a case of tuberculosis of the third portion of the duodenum. Two years later Ostrum and Serber[6] reported two cases of duodenal tuberculosis, and in 1954 Anderson, Pontius and Witkowski[1] wrote of a case in the duodenal bulb.

REPORT OF A CASE

The patient, a 51-year-old Filipino, entered Wadsworth Hospital July 11, 1955, with chief complaints of epigastric pain for one year, with some relief on ingestion of food, and a 6-pound loss of weight in three months. There was one episode of a tarry stool. An upper gastrointestinal radiographic study done elsewhere one year before was said to show a duodenal ulcer. Upon physical examination, mild tenderness in the epigastrium was noted. No abnormalities were noted on examination of the blood and urine, and the serum amylase content was within normal limits.

Upper gastrointestinal radiographic studies were interpreted as showing an ulcerating and apparently infiltrating destructive mucosal lesion of the second portion of the duodenum (Figure 1). This was interpreted as suggestive for carcinoma of the duodenum with other possibilities being carcinoma of the ampulla of Vater or pancreas. A roentgenogram of the chest showed no abnormality.

At operation, July 19, an infiltrating lesion was observed in the descending duodenum. There were large nodes along the portal vein and hilus of the liver. Biopsy specimens were taken from thickened mucosal folds of the second portion of the duodenum and frozen sections were reported as showing possibly lymphosarcoma. A frozen section of a lymph node from the hilus of the liver showed caseous tuberculosis. Subtotal gastrectomy was done. However, pathological study of the surgical specimens (Figures 2 and 3) revealed tuberculous duodenitis with caseation of draining lymph nodes. A pulmonary embolus developed postoperatively and bilateral saphenous and femoral vein ligation was carried out. Pancreatitis also developed, the blood

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From Wadsworth Hospital, Department of Radiology, Veterans Administration Center and the Department of Radiology, University of California at Los Angeles, Medical Center, Los Angeles 25.

Submitted August 9, 1960.

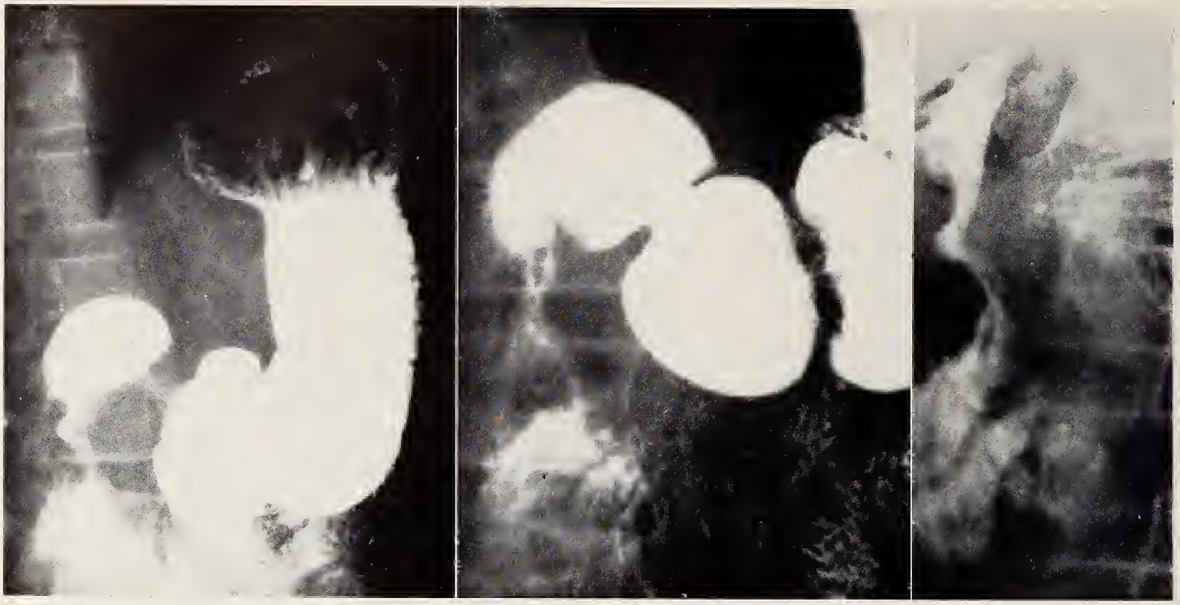

Figure 1.—*Left,* radiograph showing a long narrow infiltrating lesion of the second portion of the duodenum with ulceration. *Center,* spot film of second portion of duodenum, showing destroyed and distorted mucosa. *Right,* spot film of second portion of duodenum, showing ulceration and narrowing.

amylase rising to 18,000 units. The condition of the patient deteriorated rapidly and he died August 2.

At post mortem examination tuberculosis of the second portion of the duodenum was observed, with post-surgical changes and caseous tuberculous lymphadenitis of para-duodenal, gastro-hepatic and porta hepatis nodes. Generalized peritonitis, pulmonary embolism and focal hemorrhagic pancreatitis were also noted.

Symptoms and Physical Findings

The symptoms of duodenal tuberculosis are not specific. Sometimes there are no symptoms, sometimes symptoms are like those of duodenal ulceration, sometimes there are diffuse symptoms referrable to the gastrointestinal tract. There may be hematemesis, melena, loss of weight, pain and fever. Often the disease is associated with either active or arrested pulmonary tuberculosis. In some cases there is primary intestinal involvement.

The physical features usually are not specific or helpful in making a correct diagnosis. Occasionally non-specific epigastric tenderness may be present, and a mass may be palpated.

Pathology

Like intestinal tuberculosis, duodenal tuberculosis can be ulcerative or hyperplastic.

The ulcerative type is most common. Ulcers may be single or multiple. The tubercle bacilli reach the submucosal layer, producing caseation and ulceration into the lumen of the intestinal tract. The tuberculous ulcers may be scalloped, irregular and undermined or elevated. Tubercles are often seen like a string of pearls over the serosa and along the lymphatic chain. Adjacent lymph nodes are often involved. Fistulae, sinus tracts and perforations are common.

The hyperplastic type is characterized by a proliferative thickening of the bowel wall, producing a granulating, polypoid appearance of the mucosa which grossly may be indistinguishable from a neoplastic process. Ulceration is rare in this type.

Microscopically (Figures 2 and 3) characteristic tubercles have epithelioid and giant cells located in swollen follicles, and rarely tubercle bacilli. Miliary or sub-miliary tubercles, isolated or in groups, may be found in the mucosa, submucosa and muscularis, or in the margins of ulceration.

Radiographic Features

In roentgenographic studies the mucosa is usually irregular, involving a long segment, often with polypoid mucosal changes suggesting neoplasm, and may or may not be ulcerated. In some cases involving the duodenal bulb, the deformity is difficult to differentiate from a duodenal ulcer. A delay of passage of barium through the involved area of duodenum, with dilatation both proximal and distal to the lesion, is seen occasionally. Sinus tracts leading from the ulceration can be seen. As the lesion heals, scarring can occur and with it the development of obstruction by stenosis, angulation or retraction of the bowel by adhesive bands.

Operative Observations

In the case herein reported, and in several others previously reported, the lesion as seen at operation closely resembled neoplasm. There were thickened, nodular, proliferative, polypoid mucosal changes

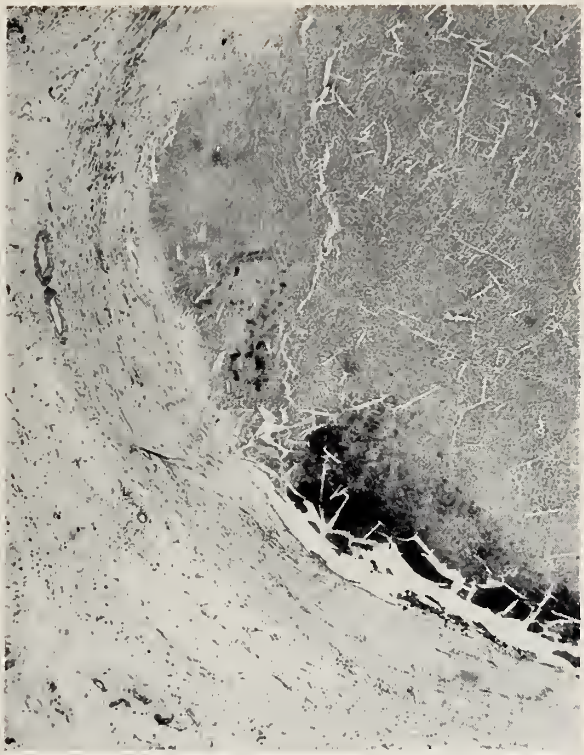

Figure 2.—Microscopic section (×75) showing caseous necrosis in an abdominal lymph node.

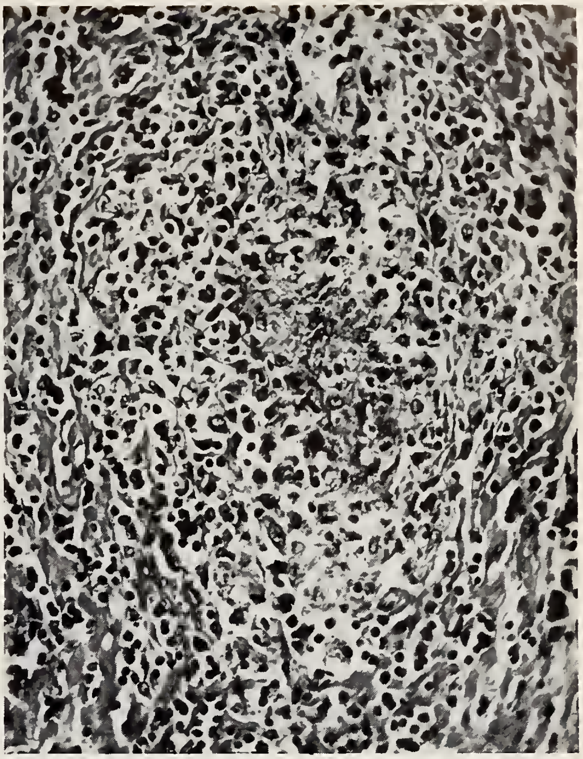

Figure 3.—Microscopic section (×150) showing a granuloma in the wall of the duodenum.

with associated enlarged lymph nodes. However, one may find sinus tracts with intraperitoneal or retroperitoneal abscesses, adhesions and tuberculous peritonitis.

SUMMARY

A case report of ulcerative tuberculosis of the second portion of the duodenum with radiographic findings is given. Radiographically the lesion simulated both neoplasm and post bulbar ulceration of the duodenum. At operation it resembled a neoplasm.

Discussion of the symptoms, physical, radiographic, surgical and pathologic features of duodenal tuberculosis is presented.

Wadsworth Hospital, Veterans Administration Center, Wilshire and Sawtelle Boulevards, Los Angeles 25 (Davis).

REFERENCES

1. Anderson, R. E., Pontius, G. V., and Witkowski, L. J.: Tuberculosis of the duodenum, Am. J. of Surg., 88:953-958, Dec. 1954.

2. Hoffman, B. P., and Grayzel, D. M.: Benign tumors of the duodenum, Am. J. of Surg., 70:394-400, Dec. 1945.

3. Mallory, T. B.: Case records of the Massachusetts General Hospital, N.E.J.M., 226:773-776, May 7, 1942.

4. Matthews, W. B., Delaney, P. A., and Dragstedt, L. R.: Duodenal tuberculosis, Arch. of Surg., 25:1055-1066, Dec. 1932.

5. Migliaccio, A. V.: Tuberculosis of the third portion of the duodenum, Am. J. of Surg., 71:274-276, Feb. 1946.

6. Ostrum, H. W., and Serber, W.: Tuberculosis of stomach and duodenum, Am. J. of Roent. and Rad. Ther., 60:315-322, Sept. 1948.

7. Reeves, R. J.: Tuberculous ulceration of the duodenum, Am. J. of Roent. and Rad. Ther., 25:88-90, Jan. 1931.

8. Warren, K. W.: The surgical treatment of uncommon lesions of the duodenum, The Surg. Clinics of N.A., 32:877-898, June 1952.

California
MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

C. P. S. - Blue Shield

California physicians' service was put together more than twenty years ago by a dedicated group of physicians who saw in the depression-bound 30's that the provision of medical services was becoming, in the minds of the people, a necessity which must be made to conform with family budgeting procedures.

In the twenty years since its founding C.P.S. has not only proved its ability to fulfill its original purpose but has demonstrated its ability and flexibility under a variety of circumstances which enable it to serve the people and the medical profession alike.

It has handled the home-town medical care problem of the Veterans' Administration for more than 13 years. It has handled the Medicare program for the dependents of service personnel since the inception of that program. It has served as fiscal agent for public welfare programs in the majority of the counties of the state. It has served as fiscal agent and underwriter for some of the local medical care programs embraced by foundations for medical care in several of the counties.

Most recently C.P.S. has emerged as the program of choice for 100,000 Californians who are federal employees and who chose the Blue Shield concept as their preferred method of providing medical and hospital care for themselves and their families.

In addition, C.P.S. has produced a medical care plan for the aged and has pioneered in a variety of empirical experiments in fields covering mental health, the aged, in-patient services and other areas.

Throughout this experience, C.P.S. has acted under the direct authority and control of the physicians of the state as represented in the House of Delegates of the California Medical Association. Its policies and directives emanate from the same body of representatives that sets policies for the 17,000 plus physicians who make up the state association.

To carry out these policies and directives, C.P.S. is managed by a Board of Trustees which includes both physicians and lay members. The physician members of the board are elected by the C.M.A. House of Delegates, with the exception of three who are named by the C.M.A. Council from its own membership. These Councilors also are elected by the House of Delegates. The lay members of the board are chosen from the business, public and religious interests of the people of California and are subject to confirmation by the House of Delegates. It is noteworthy that these lay members have consistently been executives who enjoy a high standing in their own fields of endeavor and who are willing to contribute their time and talents as a service to the public.

Today, after two decades of experience, C.P.S. would appear to be prepared to meet all challenges and to provide all services that are in the public interest, that recognize the needs and practices of its physician members and that are actuarially sound.

In spite of this apparent position, however, we find C.P.S. beset with a number of problems which a knowledgeable observer might have expected to see solved some years back.

Details need not be gone into here, but it is obvious that many of the problems of C.P.S. stem from its owners, the physicians. Some physicians have never approved of the interjection of a third party—even their own organization—into the normal physician-patient relationship. Some have never agreed that the service principle, under which the subscriber whose income is below an established level is provided professional services rather than dollars, is a good thing. And some physicians just don't want to be bothered. One measure of the general attitude of physicians, however, is that some 14,500 of them are C.P.S. members.

Many of these physicians, of course, interpret the service concept of medical care in terms of their own practices and activities. And many of them may be suspect of ignoring or failing to keep pace with the drastic social changes which have occurred in recent years.

Whereas twenty years ago the employer paid an agreed wage and no more. employers today are averaging about 20 per cent of their payrolls as additional costs for fringe benefits. The fringe items almost invariably include some provision for medical and hospital care.

The giant strides made by all forms of voluntary health insurance underwriting under these conditions are apparent to all. They have regularly been used to combat the proposals of the more vocal do-gooders that all medical care should be made a function of government, paid for by taxation. Only the tremendous growth of the voluntary plans has stood in the way of the compulsory health insurance proposals made at both state and federal levels.

With the growing public interest and participation in the voluntary forms of health insurance has come the demand for certainty of coverage. Employers and employees alike are quick to protest when a service is provided and the physician sees fit to collect the insurance benefit and then add on an additional fee which becomes the personal responsibility of the employee. Some of this protest is reflected in the growth of the closed-panel systems which do not assess additional fees. Some of it shows up in the acceptance of indemnity programs by employee groups, accompanied by the formation of a panel of physicians in the area who agree to accept the indemnity allowances as full payment for services. In either event, it is obvious that the medical profession is being splintered.

It must be understood that only a physician, or a group of physicians such as in C.P.S., can sell medical services. The sale of these services by anyone else comes under the legal proscription against corporate medical practice. However, by combining an indemnity schedule of allowances with the agreement of individual physicians to accept these sums as payment in full, the promoters of some plans are able to drain away from the medical profession its inherent and exclusive right to market its own services as a professional skill.

Doubtless some of today's programs of this character are experimental and possibly visionary. They may seem to offer an immediate benefit despite long-range potentialities of danger.

Now would seem to be the time for all physicians to indulge in some clear thinking, to analyze both the good and the bad features of a variety of prepayment plans and to give credit where credit is due.

If this process is followed, C.P.S. will most certainly be credited with a number of assets which other plans cannot claim. It is the doctors' own plan, subject to their wish. It is a professional, rather than a commercial plan. It has the right, by nature and by law, to offer services rather than dollars. It has the public interest at heart. And, it represents physicians in a number of dealings with government where individual efforts would be lost. It operates locally, but in combination with its counterparts in other states it forms the nationwide Blue Shield and becomes a national power where such power is needed.

It is not our purpose here to decry other forms of voluntary health insurance. It is obvious to all that in so new a field of endeavor there must be competition and that such competition is effective in producing the greatest benefit for the greatest number of people.

It is our purpose to suggest that California Physicians' Service and the Blue Shield movement have within themselves a number of features which are designed for and by physicians. It is our further purpose to suggest that all California physicians give some serious thought to the future of medical practice under evolving social mechanisms and to consider which forms of prepayment medical care insurance offer the sound features which may be counted upon to be truly representative of the medical profession in the years to come.

Surely C.P.S. will stand high in such a list, if not at the pinnacle.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

County Society Officers

A Meeting on The Challenge to Private Practice

A DAY-AND-A-HALF long conference of officers of county medical societies in California on various aspects of "The Challenge to the Private Practice of Medicine" will be held at the Biltmore Hotel, Los Angeles, February 11 and 12. Besides the component society representatives, all others interested are welcome to attend.

Sponsored by the California Medical Association, the conference will be addressed by outstanding speakers on medical economics, insurance plans, governmental medical care programs, medical care plans of trade unions, and legislative prospects. It will serve also for the indoctrination and instruction of the county society officers as to the relationship of the component societies to the functions and programs of the state association.

The program for the meeting, which is to last all day Saturday, February 11, and Sunday forenoon, follows:

SATURDAY

9:00—Registration.

9:30—Welcome; Format of Conference; Introduction of Chairman—Paul D. Foster, M.D., President.

PANEL NO. 1

Trends in the Future of Private Practice

Moderator: Malcolm C. Todd, M.D., Councilor, Third District

9:45—PROFESSOR WALTER J. MCNERNEY, Director, Program in Hospital Administration, School of Business Administration, University of Michigan, Ann Arbor, Michigan.

10:15—JOHN TOMAYKO, Director, Insurance, Pensions and Unemployment Benefits Department United Steelworkers of America, Pittsburgh, Penn.

10:45—CHARLES E. THOMPSON, M.D., Medical Consultant, Chicago Truck Drivers, Chauffeurs and Helpers Union of Chicago and Vicinity (Independent), Chicago, Illinois.

11:15—ROGER O. EGEBERG, M.D., Director, Los Angeles Department of Charities; Chairman, Governor's Committee on the Study of Medical Aid and Health.

11:45—Questions.

12:30—Luncheon. DONALD H. STUBBS, M.D., Chairman, Board of Directors, National Association of Blue Shield Plans, Washington, D. C.

PANEL NO. 2

Trends in the Future of Voluntary Health Insurance

2:30—Moderator: Donald C. Harrington, M.D., Chairman, Commission on Medical Services.

2:40—MRS. AGNES W. BREWSTER, Medical Economist, Division of Public Health Methods, Public Health Service, U. S. Department of Health, Education and Welfare, Washington, D. C.

3:10—JOSEPH F. FOLLMANN, JR., Director of Information and Research, Health Insurance Association of America, New York.

3:40—JAMES BRINDLE, Director, Social Security Department, United Auto Workers, Detroit, Michigan.

4:10—ODIN ANDERSON, Ph.D., Research Director, Health Information Foundation, New York.

4:40—Questions.

SUNDAY

PANEL NO. 3

Government in Medical Care

9:00—Moderator: Samuel R. Sherman, M.D., Chairman of the Council.

PAUL D. FOSTER, M.D. . . . . President
WARREN L. BOSTICK, M.D. . . . . President-Elect
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The Social Movement—Its Implications to Private Practice: Thomas F. Johnson, Director of Research, American Enterprise Association, Washington, D. C.

Canadian Experiences: M. R. MacCharles, M.D., Vice-President, Trans-Canada Medical Plans, Winnipeg, Manitoba.

The California Picture: Dan O. Kilroy, M.D., Chairman, Committee on Legislation.

The National Picture: C. Joseph Stetler, Director, Division of Socio-Economics, AMA, Chicago, Illinois.

Questions.

11:45—1961 House of Delegates: James C. Doyle, M.D., Speaker of the House.

1961 Secretaries' Manuals: John Hunton, Executive Secretary.

12:30—Adjournment.

Joint News Release By CMA and COA

The following news story was sent jointly by the California Medical Association and the California Osteopathic Association to newspapers in California for release December 15, 1960.

Further progress in the long series of negotiations between the leaders of the California Medical Association and the California Osteopathic Association based upon mutual desires for the over-all improvement in medical care for all Californians through the anticipated unification of the two professions was announced here today.

Only broad principles, according to the joint announcement by the two associations, have been agreed upon thus far. The details of any final agreement between the members of the two professions, it was pointed out, will have to be approved by the respective House of Delegates meetings at their 1961 sessions.

Both presidents, Doctor Paul D. Foster of CMA and Doctor Dorothy J. Marsh of COA, were in total agreement that the contemplated unification would:

1. Lead to the increase in the total number of qualified physicians and surgeons to serve the state's growing population;

2. Provide additional postgraduate opportunities for the practicing physicians of the state;

3. Unite the two groups with a renewed determination to preserve the freedom of the doctors to provide the best possible patient care.

The Board of Osteopathic Examiners was established by the California voters in 1922 as a part of the "Osteopathic Act." The Board, by law, issues licenses to osteopathic physicians and surgeons which grant them the same privileges as medical doctors who have been licensed by the State Board of Medical Examiners.

Examinations for both groups are identical.

The standards set by the California Osteopathic Board, it is generally agreed, are higher than any other state where this type of license is granted.

In Memoriam

Bailey, Oliver Ladbrook. Died in San Francisco, November 19, 1960, aged 59. Graduate of the University of Toronto Faculty of Medicine, Ontario, Canada, 1934. Licensed in California in 1947. Doctor Bailey was a member of the San Francisco Medical Society.

✣

Baker, Blanche M. Died in San Francisco, December 11, 1960, aged 54. Graduate of Ohio State University College of Medicine, Columbus, 1939. Licensed in California in 1946. Doctor Baker was a member of the San Francisco Medical Society.

✣

Davis James Valentine. Died in Glendale of heart disease, December 11, 1960, aged 54. Graduate of Columbia University College of Physicians and Surgeons, New York, 1936. Licensed in California in 1946. Doctor Davis was a member of the Los Angeles County Medical Association.

✣

Gates, Morris J. Died in Santa Cruz, November 17, 1960, aged 90. Graduate of the Kentucky School of Medicine, Louisville, 1894. Licensed in California in 1894. Doctor Gates was a member of the Santa Cruz County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

Greenhalgh, Marlin Douglas. Died in an airplane crash, November 20, 1960, aged 48. Graduate of the University of Utah College of Medicine, Salt Lake City, 1950. Licensed in California in 1950. Doctor Greenhalgh was a member of the Sonoma County Medical Society.

✣

Kellett, Mack A. Jr. Died in Northridge, November 10, 1960, aged 40. Graduate of the University of Arkansas School of Medicine, Little Rock, 1944. Licensed in California in 1950. Doctor Kellett was a member of the Los Angeles County Medical Association.

✣

Polito, Santo Salvatore. Died in Burbank, November 19, 1960, aged 49. Graduate of the University of Buffalo School of Medicine, New York, 1936. Licensed in California in 1944. Doctor Polito was a member of the Los Angeles County Medical Association.

✣

Reeves, John Murphy. Died December 10, 1960, aged 70. Graduate of Vanderbilt University School of Medicine, Nashville, Tennessee, 1921. Licensed in California in 1923. Doctor Reeves was a member of the Alameda-Contra Costa Medical Association.

California Medical Association

1961

For complete program
see March issue

Annual Session

AMBASSADOR HOTEL • LOS ANGELES

APRIL 30 to MAY 3

- Five Outstanding Guest Speakers
- General Scientific Meetings
- Specialty Scientific Meetings
- Postgraduate Courses
- Medical Motion Picture Symposia
- Technical Exhibits • Scientific Exhibits
- Presidents' Dinner Dance
  Sunday, April 30 • Cocoanut Grove
- House of Delegates
  Opening Session Saturday, 2:00 p.m., April 29
  Sunday, April 30, Tuesday Afternoon, May 2, and Wednesday, May 3
- Registration Daily
  8:30 a.m. to 5:00 p.m. . . . No Registration Fee

PLEASE MAKE HOTEL ROOM RESERVATIONS ONLY THROUGH C.M.A. OFFICE IN SAN FRANCISCO. USE RESERVATION REQUEST FORM ON PAGE 47.

C.M.A. ANNUAL MEETING—1961 SCIENTIFIC SESSIONS

LOCATION **AMBASSADOR HOTEL** (Lobby Floor)	**SUNDAY APRIL 30**		**MONDAY MAY 1**		**TUESDAY MAY 2**		**WEDNESDAY MAY 3**	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Embassy Room	**9:30 a.m.†** **House of Delegates** †See note below for Opening Session	**2 p.m.** General Meeting Inflammatory Diseases of the Colon	**9 a.m.** General Meeting Diagnostic Methods of Gastroenterology		**9 a.m.** General Meeting Five Guests Five Topics	**House of Delegates**	**House of Delegates**	
West Venetian Room	**9 a.m.** Internal Medicine	**2 p.m.** Film Symposium	**9 a.m.** Film Symposium	**2 p.m. & 8 p.m.** Film Symposia	**9 a.m.** Film Symposium	**2 p.m. & 8 p.m.** Film Sympasia	**9 a.m.** Film Symposium	**2 p.m.** Film Symposium
East Venetian Room	**9 a.m.** Pathology					**2 p.m.** Industrial Medicine Physical Medicine General Practice		**2 p.m.** Public Health
Regency Room	**9 a.m.** Obstetrics and Gynecology	**2 p.m.** Eye Anesthesiology		**2 p.m.** Anesthesiology		**2 p.m.** Obstetrics and Gynecology Anesthesiology	**9 a.m.** Neurology	**2 p.m.** Psychiatry
Grove Lounge	**9 a.m.** Dermatology	**2 p.m.** Ear, Nose, Throat					**9 a.m.** Urology	**2 p.m.** Urology
Lido Room	**9 a.m.** Radiology	**2 p.m.** Radiology			**9 a.m.** Physical Medicine			**2 p.m.** Internal Medicine
Colonial Room	**9 a.m.** General Surgery					**2 p.m.** Disaster Medical Care		
Rose Room	**9 a.m.** Orthopedics							
(Casino Floor) Oval Room A	**9 a.m.** Allergy	**12 noon** Allergy Luncheon and Business Meeting						**2 p.m.** Pediatrics
WHITE MEMORIAL HOSPITAL	**9 a.m.*** **(Bus at 8 a.m.*)** Postgraduate Course C.M.E.			**2 p.m.*** **(Bus at 1 p.m.*)** Postgraduate Course C.M.E.		**2 p.m.*** **(Bus at 1 p.m.*)** Postgraduate Course C.M.E.		
L. A. COUNTY HOSPITAL (Starts Saturday)	**9 a.m.*** **(Bus at 8 a.m.*)** Postgraduate Courses U.S.C.	**2 p.m.** **(No bus)** P.G. Course—Cardiac Resuscitation—U.S.C.						

*Buses will leave Ambassador Hotel, Wilshire Entrance.
U.S.C. and U.C.L.A. Courses will start on Saturday.
†**Opening meeting, House of Delegates, 2:00 p.m., Saturday, April 29.**

Technical Exhibits—Sunset Room, Ballroom and Boulevard Room, Casino Floor.
Scientific Exhibits—Lido Patio, Lobby Floor.
Council of the C.M.A. Meets Daily at 7:30 a.m. in the Frenchette Room.

4 POSTGRADUATE COURSES

C.M.A. ANNUAL SESSION • *April 29–May 3, 1961* • *Los Angeles*

The California Medical Association *in cooperation with the Medical Schools of* University of Southern California *and* College of Medical Evangelists, *will present four Postgraduate Courses at the time of the Annual Session in April. These courses will be clinically oriented and will include case presentations.*

Choose the course which most interests you, follow the course, and the 1961 session will send you back to your practice stimulated and refreshed.

Look for the program giving complete details which will arrive in your office in March.

• By COLLEGE OF MEDICAL EVANGELISTS

Clinical Neurology—9 hours

Time: Sunday, April 30, 9:00 a.m.† to 12:00 noon; Monday and Tuesday, May 1 and 2, 2:00 p.m.† to 5:00 p.m.

Place: White Memorial Hospital. *Fee:* $25.00

• By UNIVERSITY OF SOUTHERN CALIFORNIA

Uses and Limitations of Laboratory Tests—9 hours

Time: Saturday, April 29, 9:00 a.m.† to 12:00 noon; 2:00 p.m.‡ to 5:00 p.m.; Sunday, April 30, 9:00 a.m.† to 12:00 noon.

Place: Los Angeles County Hospital. *Fee:* $25.00

Office Gynecology—9 hours

Time: Saturday, April 29, 9:00 a.m.† to 12:00 noon; 2:00 p.m.‡ to 5:00 p.m.; Sunday, April 30, 9:00 a.m.† to 12:00 noon.

Place: Los Angeles County Hospital. *Fee:* $25.00

Cardiac Resuscitation—2 hours

Section I*—Saturday, April 29, 2:00 p.m.‡ to 4:00 p.m.

Section II*—Sunday, April 30, 2:00 p.m.‡ to 4:00 p.m.

Place: Los Angeles County Hospital. *Fee:* $30.00

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*Each Section is all-inclusive. Each Section is limited to 15 registrants from areas other than San Francisco or Los Angeles.

† ‡ Bus transportation is provided to reach the courses at the times marked with a dagger (†), but not for the times marked with a double dagger (‡). The buses will leave the Ambassador Hotel, Wilshire entrance, at 8:00 a.m., for the courses that begin in the mornings, and at 1:00 p.m. for the courses that begin in the afternoons.

APPLICATION FOR ENROLLMENT

Mail to: Postgraduate Activities, California Medical Association
2975 Wilshire Boulevard, Los Angeles 5, California

With check or money order in the amount of $______ made payable to *California Medical Association*

Name______________________________

Address______________________________

I am in General Practice______________ I limit my practice to______________

Medical School Attended______________ Year of Graduation______________

Please enroll me in the course indicated by ✓.

☐ 1. **Clinical Neurology** (9-hour course, Sunday morning; Monday and Tuesday afternoons)—$25.00

☐ 2. **Uses and Limitations of Laboratory Tests** (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 3. **Office Gynecology** (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 4a. **Cardiac Resuscitation—Section I—Satday afternoon**—$30.00

☐ 4b. **Cardiac Resuscitation—Section II—Sunday afternoon**—$30.00

APPLICATION FOR HOUSING ACCOMMODATIONS

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association**, April 30*-May 3, 1961, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, your chance of securing accommodations of your choice will be better if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

Ninetieth Annual Session

CALIFORNIA MEDICAL ASSOCIATION

Los Angeles, California

APRIL 30*-MAY 3, 1961

HOTEL ROOM RATES†

	Single	Twin Beds	Suites
AMBASSADOR HOTEL			
3400 Wilshire Boulevard			
Main Building	14.00-24.00	18.00-28.00	40.00-58.00
Garden Studios	22.00-34.00	24.00-36.00	54.00-66.00
CHAPMAN PARK HOTEL			
3405 Wilshire Boulevard	10.00-11.00	14.00-16.00	20.00-28.00
Bungalows		18.00	25.00-28.00
THE GAYLORD HOTEL			
3355 Wilshire Boulevard	9.00-10.00	12.00-15.00	Single: 25.00 Double: 35.00
HOTEL CHANCELLOR			
3191 West Seventh Street	8.00-10.00	12.00	
SHERATON-WEST			
(formerly Sheraton-Town House)			
2961 Wilshire Boulevard	12.50-20.00	17.50	34.00

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1961

***April 29: House of Delegates will start with afternoon meeting Saturday, April 29.**

†The above quoted rates are existing rates but are subject to any change which may be made in the future.

CALIFORNIA MEDICAL ASSOCIATION—Dept. 74
693 Sutter Street
San Francisco 2, California

Please reserve the following accommodations for the 90th Annual Session of the California Medical Association, in Los Angeles April 30-May 3, 1961. (House of Delegates members: First meeting of House begins Saturday afternoon, April 29.)

Single Room $.................. Twin-Bedded Room $..................

Small Suite $.................. Large Suite $.................. Other Type of Room $..................

First Choice Hotel.................. Second Choice Hotel..................

ARRIVING AT HOTEL (date):.................. Hour:..........A.M..........P.M. } Hotel reservations will be held until

Leaving (date).................. Hour:..........A.M..........P.M. } 6:00 p.m., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of both persons for each twin-bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

Individual Requesting Reservations—Please print or type

Officer?.......... Delegate?.......... Alternate?..........

Name..................

County..................

Address..................

City and State..................

11th ANNUAL

POSTGRADUATE INSTITUTE

SOUTHERN COUNTIES

Presented by U.S.C. School of Medicine, Phil R. Manning, M.D., Associate Dean Postgraduate Division, and California Medical Association Committee on Postgraduate Activities.

Guest Speaker: Jerome W. Conn, M.D., Professor of Medicine, University of Michigan.

El Mirador Hotel, Palm Springs

February 2 and 3, 1961

PROGRAM

THURSDAY, FEBRUARY 2

Morning Meetings

9:15-10:15—**Primary Aldosteronism and Hypertensive Disease**—Jerome W. Conn, M.D.

10:30-11:00—**The Office Approach to Low Back Pain**—Lorin L. Stephens, M.D.

11:00-11:30—**Further Advances in the Tranquilizers**—John L. Webb, Ph.D.

11:30-12:30—**Rheumatic Fever**—George C. Griffith, M.D.

ELECTIVES

10:30-12:30—**Workshop in Jaundice**—Telfer B. Reynolds, M.D.

10:30-12:30—**Pitfalls in the Diagnosis of Secondary Hypertension and Use of the Ophthalmoscope in Evaluation of Hypertension**—Phil R. Manning, M.D.; Richard L. Kasper, M.D.

Afternoon Meetings

2:00-3:20—**Panel on Gallbladder Diseases**—Clarence J. Berne, M.D., Bernard J. Haverback, M.D., Telfer B. Reynolds, M.D.

3:30-4:00—**Difficulties in Diagnosis and Treatment in the Otitis Media**—Irwin Harris, M.D.

4:00-4:30—**The Practical Aspects of Newer Advances in Endocrinology**—Don H. Nelson, M.D.

4:30-5:00—**Management of Breech Presentation**—Gail V. Anderson, M.D.

ELECTIVES

2:00-5:00—**Motion Picture Symposium on Surgery**—Raymond F. Tatro, M.D., Moderator.

3:30-5:00—**Workshop in Cardiovascular Diagnosis**—George C. Griffith, M.D.

7:00-8:00—**"No Host" Cocktail Party.**

8:00—**Informal Dinner and Dancing.**

FRIDAY, FEBRUARY 3

Morning Meetings

9:15-10:15—**Helpful Hints in the Recognition and Treatment of Various Types of Spontaneous Hypoglycemia**—Jerome W. Conn, M.D.

10:30-11:00—**The Sore Shoulder and Neck**—Lorin L. Stephens, M.D.

11:00-11:30—**Use of Amine Oxidase Inhibitors**—John L. Webb, Ph.D.

11:30-12:30—**Selection of Patients for Cardiac Surgery**—Leonard H. Schwartz, M.D.

ELECTIVES

10:30-12:30—**Workshop in the Use of Antibiotics**—Phil R. Manning, M.D.

10:30-12:30—**Discussion of Problem Obstetrical Cases**—Gail V. Anderson, M.D.

Afternoon Meetings

2:00-3:20—**Panel on Duodenal Ulcer**—Clarence J. Berne, M.D., Bernard J. Haverback, M.D., Telfer B. Reynolds, M.D.

3:30-4:00—**Diagnosis and Treatment of Adrenal Disorders**—Don H. Nelson, M.D.

4:00-4:30—**ENT Problems in Allergic Children**—Irwin Harris, M.D.

4:30-5:00—**Management of Bleeding Problems During Prenatal Period**—Gail V. Anderson, M.D.

ELECTIVES

3:30-5:00—**Printed Case Discussions**—Telfer B. Reynolds, M.D.

3:30-5:00—**Workshop in Medical Ophthalmology**—Richard L. Kasper, M.D.

HOST: San Bernardino County Medical Society . . . **REGIONAL CHAIRMAN:** Raymond F. Tatro, M.D., 491 Fifth Street, San Bernardino. **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

THERE WERE 121,523 cases of notifiable infectious diseases reported through November, compared with 116,401 cases in 1959. Among the most frequently occurring infectious diseases, there was a significant increase in streptococcal infections, which topped the 1960 list with 28,800 reported cases, through November, compared with 22,361 for all of 1959. Cases of venereal diseases, mumps and viral hepatitis also increased in number. There was a substantial decrease in cases of measles and pertussis.

The current trend as regards venereal disease is unfavorable. There have been substantial increases in reported cases of both infectious syphilis and gonorrhea.

Tuberculosis ranks sixth among notifiable diseases in the number of new cases. It is the cause of half the deaths due to notifiable diseases. Preliminary figures indicate that the number of new cases in 1960 will decline less than at any time in the past ten years. Similarly, the deaths from this disease are expected to show a very small decline. The decline may be due to stabilized disease rates in older persons and, in some areas of the state, to improved reporting.

* * *

More than 12,750 radiation installations have been registered with the department. Current estimates are that this represents at least 75 per cent of all radiation source possessors in the state.

About 45 per cent of the registrants thus far are dentists, and almost 50 per cent are physicians, representatives of hospitals and x-ray laboratories, veterinarians, chiropractors and podiatrists. Most of the remaining registrations are for industrial, governmental, or educational facilities.

X-ray rachines are the most frequently reported radiation source. These include dental x-ray units, medical radiographic, fluoroscopic, and therapeutic equipment; industrial x-ray apparatus, with such diversified uses as the measurement of the level of beer in cans, the detection of flaws in metal casings, x-ray units for the inspection of prison visitors, and x-ray diffraction units for research and analysis of materials.

Aside from the knowledge gained through registration of who has radiation sources and why, important data concerning the safety practices of source possessors are becoming available. Registrants are reporting information concerning radiation safety surveys, or the lack of them, and the use of shielding, beam limitation devices, and filters to reduce or eliminate unnecessary exposure.

It is expected this information will be helpful in pointing out areas in which practices and equipment may be improved, where educational emphasis may be placed, and where controls or inspection are necessary.

The cooperation of registrants and of others associated with the program has been deeply appreciated. The information collected with their assistance should help make radiation a less hazardous, more useful tool to everyone.

* * *

Three new projects in local health departments were approved recently by the department, including one for the development and evaluation of a family treatment program for the control of delinquency in Imperial County.

The Los Angeles City Health Department proposes to carry out a new program for the early detection of cervical cancer among patients receiving prenatal care in health department clinics. This program will be carried out in cooperation with the cytology laboratory of the Los Angeles County Hospital, and includes training of staff members in the necessary techniques.

That department also proposes to conduct a training program for selected public health administrators to improve their skills of handling the human problems of organizational administration and supervision.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Auxiliaries' Christmas Activities

I SHOULD LIKE to use this page to report some of the very fine Christmas projects which the auxiliaries carried out in their various communities. Generally speaking, these activities fall into two major categories: (1) those associated with community services, and (2) those of a philanthropic nature.

The Sonoma County Auxiliary held a family Christmas party which included the doctors, their wives and children. The program, which was put on by the children, consisted of a choir, instrumental group, ballet and skits, and was under the jurisdiction of auxiliary members. Christmas gifts were donated by the members to needy children in foster homes. These gifts consisted of sweaters, skirts, wristwatches, and toys. The list of recipients was obtained from the county probation office.

In Los Angeles, the members conducted a tea to which they brought children's clothing, plus one dollar each, for gifts to be given through the Juvenile Bureau in Long Beach. Some of the auxiliary members accompanied the Future Nurses Club and decorated the wards on the U.S.S. Haven and sang Christmas carols. Other auxiliary members made dolls and toys that were given to the children's wards in the hospital. Also, Christmas favors were presented to patients at the Christian Home of Aged.

In Santa Barbara, at their annual Christmas Tea honoring new and prospective members, members brought gifts for the Council of Christmas Cheer. This year they were requested to bring a new gift, unwrapped, for a child up to age 15. The Council of Christmas Cheer coordinated the giving of some measure of Christmas cheer in the form of food, clothing, toys or cash for needy families or individuals referred by social agencies and schools. The Council maintains a central file to prevent duplication or omission of needy families or individuals referred to the Council. The Hospitality Committee of the auxiliary also made unusual decorations to sell at this tea. The money derived from this sale was to be used for some special need.

The San Diego Auxiliary selected a private home for the aged—the Golden Rule Rest Home—to be the recipient of their contributions. The supervisor of the home was asked to find out the particular needs of each patient. These consisted of nightgowns, bed jackets, bed slippers, etc. The auxiliary members made the necessary purchases and Christmas-wrapped them. Additional items of a non-specialized nature were brought to the December meeting by the members. Auxiliary members gave a party at the Home, replete with singers, refreshments and gifts. This excellent community project served a dual purpose: one, a community need, the other, attention to our aging population.

In Stanislaus County, each couple brought an unwrapped toy or cash gift to their annual Christmas dinner dance. The money and toys were turned over to their Salvation Army and distributed through those facilities.

The Mendocino-Lake Auxiliary had two projects this Christmas season. They bought and decorated a tree for the Geriatric Ward at the county hospital, and they decorated a tree for their newly established Point Two School (for severely mentally retarded children) and purchased a gift for each child.

In Solano County it has been customary for the auxiliary to adopt a ward at the county hospital. This year they "adopted" the Women's Ward. They donated individual gifts to each patient. Their "big" donation was painting, and installing window shades for the ward. Solano, like so many of our auxiliaries, also assisted in the preparation of the TB Christmas Seals and their mailing.

Riverside Auxiliary supplied toys, used or new, to the Community Settlement House. The members prepared baskets for needy families whose names were obtained from the welfare agencies.

Orange County's contribution has been a most active and diligent work activity in the TB Christmas Seal program. This involves the fulltime participation of six members every morning of the week (five mornings) for a period of two months.

In San Bernardino, the auxiliary members worked with Santa Claus, Inc., a local organization which helps needy families at Christmas time.

MRS. SAMUEL GENDEL,
President, Woman's Auxiliary to the California Medical Association

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

A research grant to total over $87,000 for a four-year period has been awarded to Dr. Edward A. Free at Children's Hospital of the East Bay **for a study of ascites.** The award was made by the National Institutes of Health of the U. S. Department of Health, Education, and Welfare.

Dr. Free is a research assistant at the Bruce Lyon Memorial Research Laboratory at Children's Hospital of the East Bay. He is also the resident in thoracic and cardiovascular surgery.

LOS ANGELES

Dr. Edward H. Crane has been installed as president of the Los Angeles County Medical Association for 1961. Dr. Joseph P. O'Connor, who was the 1960 president, was elected a trustee. Dr. Roger Barnes was elected vice-president, and Dr. Ian Macdonald was reelected secretary-treasurer.

* * *

The 29th annual **Alumni Postgraduate Medical Convention of the College of Medical Evangelists** will be held March 12-16, at the Ambassador Hotel and White Memorial Hospital, Los Angeles.

Refresher courses will be given in internal medicine, surgery, obstetrics and gynecology, and pediatrics. They are approved for **credit by the American Academy of General Practice.** Courses will be in session from 9:00 a.m. to 5:00 p.m. at White Memorial Hospital March 12 and 13.

On March 14, 15 and 16 a series of scientific lectures and panel discussions will be presented at the Ambassador Hotel. A total of 18 national and local medical authorities will participate in these presentations.

Further information may be obtained from the Office of Public Information, College of Medical Evangelists, 1720 Brooklyn Avenue, Los Angeles 33.

SAN FRANCISCO

Dr. Malcolm S. M. Watts was installed as president of the San Francisco Medical Society at a meeting in December, succeeding Dr. Roberta Fenlon, and Dr. Eugene M. Webb was elected president-elect. Dr. Edgar Wayburn was elected secretary, succeeding Dr. John B. Schaupp, and Dr. Albert G. Clark was elected treasurer to succeed Dr. W. Dayton Clark. Dr. Helen B. Weyrauch was named editor of the *Bulletin.*

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At the annual meeting of the San Francisco chapter of the **Pan American Medical Association** the following officers were elected for 1961: President, Dr. J. Randolph Sharpsteen; first vice-president, Dr. Ray C. Atkinson; second vice-president, Dr. John W. Ashford; treasurer, Dr. Ivan A. May; secretary, Dr. Henry W. Weyrauch; chairman of regional administrators, Dr. Charles Pierre Mathé.

Drs. Paul G. Fuerstner, Saul T. Hersh and James Ownby, Jr., were elected to vacancies on the board of regional administrators.

Dr. John J. Osborn of Presbyterian Medical Center has been awarded a grant of $6,900 by the San Francisco Heart Association to support research on postoperative care of children who have had cardiac operations.

SAN MATEO

Dr. Frank J. Novak, Menlo Park, was installed as president of the San Mateo County Medical Society for 1961 at the annual meeting in December, succeeding Dr. Robert O. Holmes. Dr. Frank T. Saidy, San Mateo, was elected president-elect, and Dr. John W. Findley, secretary.

SAN BERNARDINO

Dr. Charles P. Sprague, San Bernardino, became the new president of the San Bernardino Medical Society at the annual meeting of the society in December. He succeeded Dr. Elmer O. Carlson of Ontario. Dr. William L. Cover of San Bernardino was elected president-elect, Dr. Merlin A. Hendrickson of Rialto, vice-president, and Dr. George W. Smith of San Bernardino, secretary-treasurer.

VENTURA

Dr. Charles Smolt, Ventura, was installed as the 1961 president of the Ventura County Medical Society at a meeting of the society in December. Dr. Smolt succeeded Dr. John P. Pearson of Oxnard. Dr. Frank K. Helbling was reelected secretary.

YOLO

Dr. Herbert Bauer, health officer of Yolo County, was elected president of the **California Conference of Local Health Officers** at the organization's annual meeting in November. He succeeded Dr. Everett M. Stone, Riverside County Health Officer. Dr. Dwight Bissell, health officer for the City of San Jose, was elected vice-president, and Dr. Robert S. Westphal, Stanislaus County, was elected secretary. The Conference is made up of all the local health officers in California.

GENERAL

The Fourteenth annual meeting of the **Western Society for Clinical Research** will be held January 26-28 at the Golden Bough Theater, Carmel.

* * *

The state of California has been the principal beneficiary in the **allocation of March of Dimes funds** raised in the state in the past 23 years, according to a financial summary prepared by The National Foundation.

More than 92 cents of every dollar from California's March of Dimes has been put to use in aiding the state's disease victims and in research and education projects conducted by California institutions, the report said. Of the remaining 8 per cent accruing to the national headquarters, a large portion also has been returned to California in shipments of poliomyelitis vaccine and gamma globulin and in other nationwide services conducted by the National Foundation.

The summary covers the period since the first March of Dimes was held in January, 1938, and compares the net total of funds raised in the state with amounts made available to California through September 30, 1960.

"In this period, California's 61 chapters of the March of Dimes organization raised a net total of $46,371,780.74 at an

average fund-raising cost of 10.5 per cent," according to the report, and "of this amount, $34,064,052.96 has been available to the county chapters in carrying out their extensive patient aid programs, including advances of $12,660,830.87 from the national office to meet local emergency situations.

"In addition," the report continued, "247 grants totaling $8,710,322.56 have been made in **support of research and professional education** projects at California institutions. Principal recipients of these grants have been: The University of California, Berkeley, $2,135,197.91; Stanford University, $1,692,462.50; Rancho Los Amigos, $1,659,769.68; California Institute of Technology, $1,342,968.05; University of Southern California, $774,281.09; Alameda County Board of Supervisors, $332,173.69; California State Department of Public Health, $262,570.21; Orthopaedic Hospital, Los Angeles, $123,729.74; University of California, Los Angeles, $100,323.79 and Children's Hospital, Los Angeles, $38,663.93. Fairmont Hospital has been supported to the extent of $666,838.02 through the grants to Stanford University and the Alameda County Board of Supervisors.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Below-Knee Prosthetics. Monday through Friday, January 23 through 27. Enrollment limited to 20. Fee: $125.00.

Cleft Palate Rehabilitation. Friday through Sunday, January 27 through 29. Eighteen hours. Open to dentists, physicians and others interested. Fee: Full course: $75.00; two days: $65.00; One day: $10.00.

Management of Fractures and Dislocation, and Application of Casts, Splints and Bandages. Thursday through Saturday, February 23-25. Eighteen hours. Fee: Lecture and Lab $70.00; Lecture only $40.00.

Use of Indirect Ophthalmoscopy in Retinal Detachment Surgery. Thursday through Saturday, March 2-4. Eighteen hours.*

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $2.50.

Management of Pain by Therapeutic Nerve Blocks—Harbor Hospital. Friday through Sunday, April 7 through 9. Eighteen hours. Fee: $55.00 (includes two luncheons).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through 28. Thirty-two hours. Fee: $200.00.

Management of Trauma—Harbor Hospital. Friday and Saturday, May 19 and 20. Nine hours.*

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Dermatology in Clinical Practice. Tuesday, July 11. Six hours. Fee: $20.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Endocrinology. Friday and Saturday, August 4 and 5.†

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Man and Civilization: The Control of the Mind. Saturday through Monday, January 28 through January 30. Twenty-one hours. Fee: $25.00.

Evening Lecture Series at Richmond Hospital. Thursday evenings, February 9 through March 16. Fee: $25.00.

Pain. Saturday and Sunday, February 11 and 12. Fourteen hours. Fee: $30.00.

Medicine for General Practitioners. Mount Zion Hospital. Monday through Friday, February 20 through 24. Thirty-five hours. Fee: $85.00.

Diseases of the Nervous System in Childhood. Thursday through Saturday, March 2 through 4. Twenty-one hours. Fee: $150.00.

Urology. Thursday and Friday, March 9 and 10. Fourteen hours.*

Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Sunday, March 15 through 19. Thirty-five hours.*

Evening Lecture Series in Medicine, Eden Hospital. Tuesday evenings, April 4 through May 23.†

Laboratory Investigation of Endocrine Disorders. Friday through Sunday, April 7 through 9. Twenty-one hours.*

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*Fee to be announced.

†Hours and fees to be announced.

General Surgery. Thursday through Saturday, April 13 through 15. Twenty-one hours.*

Ear-Nose-Throat. Thursday through Saturday, May 11 through 13. Twenty-one hours.*

Proctology. Thursday and Friday, May 18 and 19. Fourteen hours.*

Water, Salts and Steroids. Thursday through Saturday, May 25-27. Twenty-one hours.*

A Course in Ophthalmology. Thursday through Saturday, June 1-3. Twenty-one hours.*

A Course in Psychiatry for Physicians in General Practice. Thursday through Saturday, June 15-17. Twenty-one hours.*

Cerebral Palsy. Thursday and Friday, June 29 and 30. Fourteen hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Common Problems in Pediatrics. Sunday, January 29. Eight hours. Fee: $25.00.

Dermatologic Therapy. Saturday, February 11. Eight hours. Fee: $25.00.

Diabetes and Thyroid Disease: Current Methods in Diagnosis and Treatment. Saturday, February 25. Eight hours. Fee: $25.00.

The Four R's of Fractures: Recognition, Reduction, Retention, Rehabilitation. Saturday, March 11. Eight hours. Fee: $25.00.

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Note:

Each one of the conferences listed above	$ 25.00
A series of any 5 conferences	100.00

Operable Heart Disease. Friday and Saturday, March 3 and 4.

Conference on Keratoplasty. Wednesday through Friday, March 8 through 10. Limited enrollment.

General Review Course for Practicing Physicians. Thursday through Saturday. March 16 through 18.

Conference on Strabismus. Wednesday through Friday. July 12 through 14.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Nuclear Medicine:

Part I, January. Fee: $50.00.
Part II, eight weeks. Fee: $350.00.
Part III, twelve weeks. Fee: $350.00.

Clinical Hematology. Saturday and Sunday, February 25 and 26.*

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations):

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only):

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

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*Fee to be announced.

CALIFORNIA MEDICAL ASSOCIATION ANNUAL SESSION POSTGRADUATE COURSES

Clinical Neurology in cooperation with College of Medical Evangelists. White Memorial Hospital. Sunday, April 30, 9-12 a.m.; Monday and Tuesday, May 1 and 2, 2-5 p.m. Fee: $25.00.*

Office Gynecology in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Use and Limitations of Laboratory Tests in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Cardiac Resuscitation: in cooperation with USC School of Medicine. USC Research Building, Room 211, 2025 Zonal Avenue, Los Angeles 33. Section I: Saturday, April 29, 2-4 p.m.; Section II: Sunday, April 30, 2-4 p.m. (each Section is all-inclusive). Each Section is limited to 10 registrants from areas other than Los Angeles and San Francisco. Fee: $30.00, each Section.*

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

For Dunsmuir, Redding, Chico and Marysville in cooperation with Stanford University School of Medicine. Begins week of March 5, 1961.

For Eureka, Ukiah, Napa and Auburn in cooperation with University of California School of Medicine, San Francisco. Begins week of March 5, 1961.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatro, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 14 and 15, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* J. Malcolm Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

JANUARY MEETINGS

MARIN COUNTY HEART ASSOCIATION, Course in Cardiac Resuscitation—3 hour. Saturdays, January 14, 21, 28 and February 4. Marin General Hospital, San Rafael. Fee: $25.00. *Contact:* Richard Hahn, M.D., Chairman, 2044 Fourth St., San Rafael.

LONG BEACH HEART, CANCER AND TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 12:30 p.m., Long Beach Petroleum Club. *Contact:* Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

LOS ANGELES TRUDEAU SOCIETY and THE TUBERCULOSIS AND HEALTH ASSOCIATION OF LOS ANGELES COUNTY 8TH BIENNIAL CHEST DISEASE SYMPOSIUM. January 18 through 20. Ambassador Hotel, Los Angeles. *Contact:* Richard S. Gaines, 1670 Beverly Blvd., Los Angeles 26, California.

WESTERN PHARMACOLOGY SOCIETY ANNUAL MEETING. January 22 through 24. Miramar Hotel, Santa Monica. *Contact:* Howard R. Bierman, M.D., President, 9730 Wilshire Blvd., Beverly Hills.

THIRTIETH ANNUAL MID-WINTER CONVENTION IN OPHTHALMOLOGY AND OTOLARYNGOLOGY. January 23 to 27. Statler-Hilton Hotel, Los Angeles. *Contact:* Norman Jesberg, M.D., treasurer, 500 South Lucas, Los Angeles 17.

WESTERN SOCIETY FOR CLINICAL RESEARCH. January 26 through 28. Carmel-by-the-Sea, Calif. *Contact:* William N. Valentine, M.D., secretary-treasurer, UCLA School of Medicine, Los Angeles 24.

FRESNO COUNTY HEART ASSOCIATION Ninth Annual Central California Cardiovascular Symposium. January 27. 8:30 a.m. to 5:30 p.m. Fresno Elks Club, 5080 E. Kings Canyon Road, Fresno. *Contact:* Jack J. Jacobson, M.D., chairman, Professional Services Committee, 1584 N. Van Ness Ave., Fresno.

FEBRUARY MEETINGS

CONTRA COSTA COUNTY HEART ASSOCIATION. Co-sponsored by Alameda-Contra Costa Chapter, American Academy of General Practice. 8th Annual Postgraduate Course for Physicians. Eight 2-hour sessions on Monday evening, February 6 through March 27. 8-10 p.m. Concord Community Hospital, 2540 East Street, Concord. *Contact:* Loyse C. Casebolt, Exec. Secretary. 2030 N. Main St., Walnut Creek.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. *Contact:* Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

INSTITUTE FOR METABOLIC RESEARCH "Lipid Metabolism in Diabetes and Related Conditions" two-day round table symposium. February 7 and 8. Highland-Alameda County Hospital, Oakland. *Contact:* L. W. Kinsell, M.D., director, Institute for Metabolic Research, 2701 14th Ave., Oakland.

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*Chartered buses for Registrants will leave the Ambassador Hotel one hour before the beginning of each course and will return just after each course is over.

Napa County Heart Association 3rd Symposium on Heart Disease. February 15. 10:00 a.m. Recreation Hall, California Veterans Home, Yountville, Calif. *Contact:* Mrs. Zoi Milne, Exec. Secretary, 1121 Brown Street, Napa.

Obstetrical and Gynecological Assembly of Southern California, 16th Annual Mid-Winter Clinical Assembly. Ambassador Hotel, Los Angeles, February 13 through 17. *Contact:* Dee Davis, executive secretary, 5478 Wilshire Blvd., Los Angeles 36, WEbster 4-1551.

Los Angeles Society of Neurology and Psychiatry in cooperation with California Spinal Cord Research Foundation, Conference "Recent Contributions of Basic Research to Paraplegia." February 17 and 18. Los Angeles. *Contact:* Robert P. Sedgwick, M.D., secretary-treasurer, 2010 Wilshire Blvd., Los Angeles 57.

California Tuberculosis and Health Association, California Trudeau Society Annual Joint Meeting. February 19 through 22, Jack Tar Hotel, San Francisco. *Contact:* Executive director, C.T.H.A., 130 Hayes Street, San Francisco.

Southern California Society of Gastroenterology. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 28, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

MARCH MEETINGS

Second Low-Beer Memorial Lecture. University of California School of Medicine. March 2, 8:00 p.m. Auditorium-S, Medical Sciences Bldg., U. C. San Francisco. *Contact:* F. Buschke, M.D., Professor of Radiology, University of California Medical Center, San Francisco 22, Calif.

Southwestern Pediatric Society Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

Orange County Heart Association, Annual Symposium on Heart Disease. Saturday, March 11. All day. Charterhouse Hotel, Anaheim. *Contact:* Howard G. Buswell, Exec. Director, P. O. Box 1704, Santa Ana.

Anesthesia Section of Los Angeles County Medical Association 6th Annual Spring Postgraduate Meeting. March 11 and 12. Statler Hilton Hotel, Los Angeles. *Contact:* Thomas W. McIntosh, M.D., 686 East Union Street, Pasadena.

College of Medical Evangelists Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

Pioneers Memorial Hospital 11th Annual Medical and Surgical Postgraduate Assembly. March 17-18. Pioneers Memorial Hospital, Brawley. *Contact:* George C. Holleran, M.D., Program Chairman, P. O. Box 159, Brawley.

APRIL MEETINGS

Industrial Medical Association. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

Pacific Coast Oto-Ophthalmological Society Annual Meeting. April 30-May 4. Riviera Hotel, Palm Springs. *Contact:* Al Miller, M.D., Secretary, 500 South Lucas Ave., Los Angeles 17.

MAY MEETINGS

Los Angeles County Heart Association Annual Meeting, May 3, 12:00 noon to 2:00 p.m. Pacific Ballroom, Statler Hilton Hotel, Los Angeles. *Contact:* Mrs. Sally Smalley, Public Information Director, 2405 W. 8th Street, Los Angeles 57.

Hawaii Medical Association Annual Meeting. May 4-7. Honolulu, Hawaii. *Contact:* Lee McCaslin, Executive Secretary, 510 So. Beretania, Honolulu 13.

American Association of Genito-Urinary Surgeons (for members and invited guests). May 10-12. Del Monte Lodge, Pebble Beach. *Contact:* William J. Engel, M.D., Secretary-Treasurer, Cleveland Clinic, 2020 E. 93rd St., Cleveland 6, Ohio.

Nevada Chapter American Academy of General Practice. May 18-20, Riverside Hotel, Reno, Nevada. *Contact:* John M. Watson, Secretary, 1845 Prater Way, Sparks, Nevada.

Medical Staff of Children's Hospital of the East Bay Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

California Heart Association Annual Meeting and Scientific Session. May 19 through 21, Disneyland Hotel, Anaheim. *Contact:* J. Keith Thwaites, Exec. Director 1370 Mission Street, San Francisco.

American Orthopaedic Association (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

American Urological Association, Inc. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

Memorial Hospital of Long Beach, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

SUMMER AND FALL MEETINGS

Western Branch, American Public Health Association Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

Nevada State Medical Association 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23-26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

Washington State Medical Association Annual Convention. September 17-20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

Los Angeles County Heart Association Professional Symposium. October 11-12. 9 a.m.—5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

California Academy of General Practice 1961 Scientific Assembly. October 15-18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

THE PHYSICIAN'S *Bookshelf*

CARDIAC EMERGENCIES AND RELATED DISORDERS—Their Mechanism, Recognition and Management—Harold D. Levine, M.D., Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston, Mass.; Assistant Clinical Professor of Medicine, Harvard Medical School. Landsberger Medical Books, Inc., 51 East 42nd Street, New York, N. Y., 1960. 381 pages, $12.00.

This monograph by Dr. Levine is a sound attempt to present a practical account of the treatment of the broad field of cardiac emergencies. It is the outgrowth of seminars presented to senior students over a period of years and therefore is a general clinical account rather than a discussion of the subject in depth or a presentation of recent advances. The author has had some difficulty in separating the emergency from the long-term treatment, at times considering long-term treatment as part of the emergency, such as anticoagulant therapy and in others omitting long-term considerations such as the prevention of recurrent cardiac arrhythmia.

Although an effort has been made to explain the mechanism of the various disturbances, this aspect of the subject has not been considered in depth. Therapy has been discussed in a conventional, practical fashion although at times the author fails to be sufficiently precise in terms of what he recommends as the choice among a variety of potential treatments. For example under paroxysmal atrial tachycardia he uses such phrases as "another choice of medication . . . digitalis . . .," or "the medical literature also reports the use of calcium gluconate," or "one may use various medicinal forms of treatment, probably the simplest and most effective is the subcutaneous injection of 0.5 to 1.0 or even 2.0 mgms. of prostigmine. . . ." The reader is left in doubt as to how the author actually treats the arrhythmia and what he does if the particular treatment that he uses is not effective. It would be most helpful if the author clearly stated the measures which in his own experience were found to be reliable rather than to list all the various methods that have been used.

The discussion of digitalis toxicity is the subject of a special chapter and is most helpful. The reviewer would have liked to have seen a special section on the problem which often presents a real emergency, of when an arrhythmia is the result of excessive digitalis and when it is due to inadequate digitalis. In addition the problem of hypokalemic alkalosis could well be introduced into the discussion of electrolyte disturbances in the chapter on "refractory" congestive heart failure and the distinction between sodium depletion and sodium dilution be more clearly defined. A notable omission in the book concerns emergency treatment of hypertension or a vascular emergency.

In addition to the usual cardiac emergencies, the author has chapters on unusual and noncardiac causes of chest pain, pulmonary embolism, syncope, and cardiac arrest and resuscitation. Each chapter has pertinent references which is a distinct advantage in a monograph of this sort.

The book in general can be recommended as a good account of contemporary thought, but in view of the high price ($12) one wonders whether the reader would not profit more from purchasing one of the standard texts on heart disease.

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TREATMENT OF CANCER AND ALLIED DISEASES—SECOND EDITION—Tumors of the Breast, Chest and Esophagus, Volume IV—By Sixty-seven Authors, George T. Pack, M.D., F.A.C.S., and Irving M. Ariel, M.D., F.A.C.S., editors. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East Thirty-third Street, New York 16, N. Y., 1960. 667 pages, $30.00.

The precedent created by the first three volumes of the second edition of this nine-part work is ably continued. The excellent format, clear illustrations and legible text of the earlier volumes are maintained.

In a section on tumors of the *breast*, the senior editors reprint the well-known curve of Nathanson and Welch dealing with survival for untreated cases of breast cancer "a natural yardstick for measuring results of therapy." They fail to point out that these survival figures are estimated from the time of recognition or self diagnosis by the patient, and are not comparable with treated results, since the latter usually are and always should be dated from time of definitive treatment. A curve, corrected by the reviewer to allow for the usual delay of about six months in treated cases has been published (American Journal of Roentgenology, December 1954, page 938).

Since the authors then publish several tables and curves dealing with relative survival data from large centers such as the Mayo Clinic, it would be desirable that the next edition carry an absolute survival rate for treated cases of cancer of the breast from a representative group of centers, drawn to scale with the existing one for untreated cases.

The place of so-called radical mastectomy receives understandable emphasis in this worthy surgical text. But it is difficult to understand why the extended supraradical mastectomy (with supraclavicular and mediastinal excision) should merit a whole chapter. Halstead tried and discarded this mutilating procedure more than half a century ago, and it is questionable whether 11 pages of text and 10 beautiful illustrations should be wasted on it.

The place of orthovoltage radiation therapy in the treatment of breast cancer is ably outlined by Stenstrom and Stone. But the senior editors have appended to this a rather futile method of irradiating the internal mammary vessels which cannot be recommended, especially in the light of Haagensen's work showing that when the internal mammary chain is involved, systemic spread has usually occurred.

The valuable work of the modern Edinburgh school headed by a distinguished group of Scottish surgeons and the radiotherapist McWhirter receives scant mention. Since the absolute results by this method of treatment of carcinoma of the breast equal if they do not surpass the comparable results of "radical" mastectomy, the reason for this omission is obscure. Since the recorded death rate for carcinoma of the breast in the United States is increasing, and since radical mastectomy is now regarded by many as merely a good palliative procedure "allowing a maximum number of women to die more comfortably of visceral metastases without local chest wall or axillary recurrence," this reviewer regards the omission of a chapter on the McWhirter program as one meriting correction.

The sections on *thoracic tumors* are introduced with a copy of Rouviere's well known drawing of the lymphatic drainage of the lungs. Since more than 50 per cent of bronchogenic carcinomas originate in the periphery of the lungs, and lie in a bed of numerous thin walled veins, the importance of vascular spread should precede consideration of lymphatic involvement. The poor results attained by any method in the treatment of bronchogenic carcinoma attest this early vascular spread and are considered in subsequent chapters. The authors of the section dealing with bronchial adenomas recommend conservative removal of suitable cases and probably wisely condemn the use of radon seeds in the management of these cases.

It is difficult for the reader to ascertain the senior editor's own preference in the treatment of primary bronchial carcinomas suitable for surgical intervention. There are chapters on "radical lobectomy," pneumonectomy and certain modifications of same. The reader would probably welcome a recommended general policy.

Lampe provides a sound chapter on the radiotherapy of bronchial carcinoma, stressing the usefulness of orthovoltage roentgen therapy and its value in properly selected cases.

The section on tumors of the *esophagus* is the shortest one in the book. An undue amount of space is accorded the radical surgical removal of cancer of the esophagus in the light of the extremely modest results. The by-pass operation is considered in detail. Various methods of radiotherapy of esophageal cancer are discussed, ranging from interstitial radium to betatron treatment. An interesting chart on page 598 shows that the average survival of patients treated with external radiation sources is best with 250 KV. Cobalt and million volt therapy produced a shorter average survival time.

The place of rotation therapy is well discussed by Ebenius and colleagues, and the importance of constant check of the radiated field illustrated by photographs and diagrams. The results are modest, but again better than any published with cobalt or megavoltage, including linear accelerators. Ebenius and colleagues use 200 KV with constant fluoroscope check.

The profession is indebted to Drs. Pack and Ariel for assembling and editing the large amount of valuable material in this volume.

L. H. Garland, M.D.

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EDEMA—Mechanisms and Management—A Hahnemann Symposium on Salt and Water Retention—Edited by John H. Moyer, M.D., Professor and Chairman of the Department of Medicine, and Morton Fuchs, M.D., Assistant Professor of Medicine, Hahnemann Medical College and Hospital. W. B. Saunders Company, Philadelphia, 1960. 833 pages, $15.00.

This outstanding volume is the second of the symposia held last year at Hahnemann Medical College in Philadelphia, and maintains the high standards of the first. The date of the meeting is not stated in the volume but it is clear from the references that it was last year. The book consists of short articles by 90 authors, comprehensively reviewing the entire subject of edema. Since edema crosses various specialties, investigators from specialties other than internal medicine are included in the symposium.

The book consists of eight parts, beginning with the basic physiology of fluid and electrolyte balance which includes a discussion of cell membrane and electrolyte transfer. A discussion of the newer aspects of the counter current osmotic mechanisms of tubular reabsorption, of hormonal effects on electrolytes, aldosteronism, and the mechanisms of hyponatremia are among the subjects discussed in this important first part. Part II is a basic and clinical discussion of the pharmacology and therapeutic use of diuretics. Emphasis is given to the more recent developments. The coverage in this section is thorough with emphasis on basic mechanisms. The remaining sections cover edema secondary to steroids, electrolytes, diuretics in the treatment of hypertension, toxemia of pregnancy, edema of renal origin, of liver origin, and that associated with congestive heart failure. The articles are of a high order of competence and the references at the end of each article indicate that material of 1958 and 1959 is included. The book is profusely illustrated and many charts and diagrams aid the reader in understanding the highly technical material covered in the book.

This is probably the most comprehensive account of the subject of edema both from the physiological and the clinical aspects and should provide a much greater understanding of the complex problems which present themselves in the treatment of edema. The book can be highly recommended to all physicians interested in understanding the mechanisms and pathophysiology of electrolytes, diuretics and the diseases in which they play an important role.

Maurice Sokolow, M.D.

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OBSTETRICS (From the Original Text of Joseph B. DeLee, M.D.) Twelfth Edition—J. P. Greenhill, M.D., F.A.C.S., F.I.C.S. (Hon.) Senior Attending Obstetrician and Gynecologist, The Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, The Chicago Lying-in Hospital. W. B. Saunders Company, Philadelphia, 1960. 1098 pages, 1219 illustrations on 903 Figures, 119 in Color, $17.00.

The new edition of this major American textbook appears just five years after the previous edition, thus attesting to its popularity, but it has indeed been extensively rewritten and revised. Nine chapters have been squeezed within a framework of only ten additional pages, and the number of pages devoted to indexing is precisely the same as before. Twenty of the eighty chapters were contributed by twenty-three assisting experts, most of them nonobstetricians, and some eight other consultants reviewed and advised in the preparation of various portions of the text. Practically every page of the book has been rewritten to some extent, a good many of the older illustrations were deleted, and 162 new ones added. In many instances revision meant insertion of new fragments of text, sometimes without serious consideration of precise placement in relation to what preceded and followed. A notable example is in the section on clinical course of labor, where Caldeyro's work is quoted (and several of his graphs reproduced, without credit being given) far ahead of any mention of his name in the text. Then there follows a brief but rather anticlimactic description of some of Caldeyro's earlier work, more or less as stated in the previous edition, although even this paragraph did not escape some degree of editorial revamping. Throughout the book countless minor changes in sentence structure have been made, presumably to substantiate the claim of extensive revision, but most of these accomplished little beyond an increased work load for the typesetter.

Nevertheless, many parts of this book merit the attention of all obstetricians. Particular mention should be made of the stimulating chapter by Ernest Page on placental physiology, Erik Rydberg's explanation of cephalic labor mechanisms, and McCartney's sensible discussion of toxemia.

Davidsohn now receives full credit for the section on erythroblastosis, and this has been suitably brought up to date. Meyer Perlstein, the well-known pediatric neurologist, has contributed a short chapter on perinatal brain injury, with particular emphasis on cerebral palsy, and Honoria Acosta-Sison has expanded the excellent discussion of hydatidiform mole and choriocarcinoma. Helene Deutsch's chapter on the psychology of pregnancy has been replaced by a similar essay written by the late Flanders Dunbar.

Near the end of the book is a very short but rather fascinating chapter by the late Herbert Schmitz. Entitled "Medicomoral Problems," it is a brief discussion of the views of the Catholic Church on such matters as abortion, destructive operations on fetuses, operation for ectopic pregnancy, birth control, and artificial insemination. This should be read by all house officers who have not had occasion to acquaint themselves with Catholic doctrines that often influence obstetric and gynecologic decisions and practices.

Obviously one cannot in this setting review in depth a book of more than a thousand pages covering every facet of obstetrics and related problems, nor is there need to do so for a volume known to all workers in its field. Certainly Greenhill's text is still amongst the top three American efforts, but one gets the impression that to some extent it has gradually taken on the flavor of a reference work rather than the homespun quality of an undergraduate textbook that it had in DeLee's time. Perhaps this is good, even inevitable, as more and more information is added to the hard core of what we used to call obstetrics.

Charles E. McLennan, M.D.

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DISEASES OF THE NEWBORN—Alexander J. Schaffer, M.D., Associate Professor of Pediatrics, with a section on Neonatal Cardiology by Milton Markowitz, M.D., Assistant Professor of Pediatrics; both of the Johns Hopkins Medical School, and Pediatricians to the Johns Hopkins Hospital. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1960. 878 pages, illustrated, $20.00.

Doctor Schaffer's extensive experience of almost thirty years of caring for newborns at Sinai Hospital of Baltimore, Wonani Hospital of Maryland and the Johns Hopkins Hospital is well presented by this book. It is a comprehensive and authoritative volume on "Neonatalogy"—a word coined by Doctor Shaffer to describe the art and science of diagnosis and treatment of disorders of the newborn. There are 214 case summaries incorporated into the text to illustrate in a practical and realistic way the facets of differential diagnosis and of treatment. Illustrations are numerous and of excellent quality. References are adequate and up-to-date.

Centers caring for newborns and physicians responsible for their welfare will find this book well worth while.

William C. Deamer, M.D.

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MOSTLY MURDER —Sir Sydney Smith, C.B.E., LL.D., M.D. (Edin.), F.R.C.P. (Edin.), Emeritus Professor of Forensic Medicine, Edinburgh University. Formerly Dean of the Faculty of Medicine and Rector of Edinburgh University. With a foreword by Erle Stanley Gardner; David McKay Company, Inc., 119 West 40th Street, New York 18, N. Y., 1960. 318 pages, $4.95.

Sir Sydney Smith, one of the first medico-legal experts of our time, has prepared his autobiography to consist primarily of recounting the events and his role in a number of celebrated criminal cases.

As a pioneer in the field he takes just credit for bringing scientific crime investigation to the fore, particularly in its medical aspects. He simultaneously heaps repeated scorn on his arch rival and colleague Sir Bernard Spilsbury, a pathologist of renown in England. So blunt is this condemnation over Spilsbury's possible errors in cases where both men gave testimony in the courts, that one cannot but wonder that the acrimony in this rivalry would not have waned somewhat after Spilsbury's death. From reading the book, presumably, Sir Sydney Smith did not err at any time.

Despite this, the book presents interesting facets of cases that make fairly satisfying reading. To the person interested in forensic science, the book holds little of technical value that he would not have gathered in other reading. To the casual reader, interested in murder-mystery type material, this book would prove to be worth while, although laborious reading. The book did not prove to be one not easily put down before finishing.

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LEUKOCYTE ANTIGENS AND ANTIBODIES—Roy L. Walford, M.D., Assistant Professor of Pathology, University of California School of Medicine, Los Angeles. Grune and Stratton, Inc., 381 Fourth Ave., New York 16, N.Y., 1960. 182 pages, $6.75.

This book is a comprehensive compendium of available information on leukocyte immunology, exclusive of the role of leukocytes in the passive transfer of delayed hypersensitivity and the role of the leukocyte in antibody transport and synthesis.

The author has first-hand experience in practically all features of the problem which he covers, so that his analysis of data is particularly meaningful and critical. Of outstanding value to students and investigators in the field is his detailed description of techniques for the study of leukocyte antigens and antibodies. Included are methods of collection of leukocytes, fractionation into various types, preservation of cells, and immunologic techniques for demonstrating antigen-antibody reactions. The comparative value and meaning of results obtained by various workers using different techniques are assessed, with particular emphasis on the antiglobulin consumption test, which, in the author's opinion, is "the most important technical advance since the development of the leuko-agglutinin test."

The aspect of immuno-hematology covered in this work is among the most controversial and technically difficult. One cannot escape the feeling, after studying the subject, that the true significance of many present concepts of leukocyte immunology will be radically changed as methodology progresses. It is refreshing, therefore, to find that the author of this work stresses the errors and pit-falls in the field and avoids formulating broad schemes relating this or that laboratory finding to clinical disease. For example, he points out that the relationship of leukocyte antibodies to leukopenic states is far from clear in that a significant percentage of cases do not demonstrate antibodies, while in some cases where antibodies are present, leukopenia does not exist. One of the few clinical phenomena, that can be unquestionably related, is the high frequency of leukocyte antibodies in patients receiving multiple transfusions. Even here, however, individuals with a high titer of leukocyte antibodies do not always incur the pyrogenic reaction after transfusion which has been attributed to leukocyte antigen-antibody reactions. Also emphasized is the difficulty in establishing the specificity of leukocyte agglutination by serum containing red-cell antibodies, the need for avoiding certain pathological leukocytes and sera as test systems, and the difficulty in interpretation of leukopenic responses *in vivo* as meaning leukocyte antigen-antibody reaction.

A separate chapter on the L-E phenomenon is of considerable interest since it draws together the present thinking on the meaning of the phenomenon. It is clear that this activity involving nuclear damage and phagocytosis is distinct from the leukocyte antigen-antibody reactions as detected by leukoagglutination, etc. Another chapter deals with the important question of the relationship between humoral leukocyte antibodies and the homograft reaction. The evidence *pro* and *con* is well covered with no definite conclusion being reached.

This book will be of great value as a reference point for all workers dealing with leukocyte immunology. Although it does not cover the field completely, it is the best summarization, to date, of the highly specialized study of leukocyte antigen-antibody reactions.

CHARLES G. CRADDOCK, M.D.

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RADIATION—Use and control in Industrial Application—Charles Wesley Shilling, M.D., Sc.D., Deputy Director, Division of Biology and Medicine, U. S. Atomic Energy Commission, Washington, D. C. Grune & Stratton, 381 Fourth Ave., New York 16, N. Y., 1960. 223 pages including 13 pages of appendices and 10 columns of index, $6.75.

The author is Deputy Director of the Division of Biology and Medicine of the U. S. Atomic Energy Commission. In this book he attempts to do his duty in necessary indoctrination of the many industrial physicians who will be responsible for radiation hygiene in the rapidly expanding uses of radiation and nuclear reactions. He has managed to get most of the important things into this small book. He has shown admirable restraint in telling the physical foundations, which most authors find so romantic and so satisfying in our relatively exact knowledge of it that they give way to temptation and tell it all over again. He mentions briefly the sources of radiation hazard with reasonable evaluation of their importance. He gives a round picture of biological effects—the acute syndrome, the delayed effects and sequelae and the genetic hazards; with a really brief, well pointed sketch of genetic mechanisms.

A very short chapter on radiation accidents is followed by short notes on 21 accidents and incidents. Control of exposure, licensing, monitoring, barriers and therapy are discussed briefly. The chapters on radiation safety and the work of the health physicist and the role of legislation are a bit fuller.

Instruments and techniques of measurement are handled very briefly indeed, as are the problems of decontamination. No attempt was made to produce a technical handbook.

The disposal of radioactive waste is seen to loom very large, especially from nuclear power. The rapidly expanding uses of radioactive isotopes for control and research are illustrated with some examples. There'll be plenty of problems.

The author mentions nearly everything that should have the attention of an industrial physician. He gives quantitative values where need or curiosity can be anticipated. I find very many small things to quarrel with, yet on second look find most of them only a matter of what aspect is emphasized.

In a few places the author attempts to wrap up in a sentence what would require a goodly paragraph to state fairly in our present state of knowledge and controversy. Examples are relative effects of gamma, beta, alpha and neutron rays and the oxygen effect. In one chapter on basic effects the attenuation by distance and by absorption according to thickness are confused. In relating the effect of accidental large exposures part of the dose is given in r of 80 kv x-rays. This must have been a calculated biologic equivalent of estimated neutron dose, but is not so stated. The damaging fetal dose mentioned is 200r, whereas it is well known that 25r may be effective. The probable statistical fallacy in the reported 5 year life shortening among U. S. radiologists is not cited. A serious typographical error reverses the intended statement about a threshold dose in leukemia induction.

Some statements about protection will be seen by any medical radiologist as unwarranted. Examples: "Every x-ray unit . . . or . . . located underground, in the side of a hill . . ."; ". . . in fluoroscopy, the x-ray tube target should be at least 18 inches from . . . the patient"; ". . . bordering on malpractice is the so-called pediatric 'preventive' fluoroscopic examination of young infants." This last is likely to make some pediatricians' hair stand on end. I think the author overly hopeful about chemical therapeutic agents for radiation injury. He attempts to give the relative effectiveness of lead, concrete and steel all in one statement. He'd better not have tried.

Like everyone else connected with AEC, he calls uranium and plutonium "special nuclear material." Among his general radiologic safety rules appears: "9. All experiments using one microcurie . . . will be conducted in hoods or glove boxes." I wonder if the author would faint to see 150 millicuries of Au-198 injected into a patient's abdomen as she lies in bed.

There is one paragraph that I wish I could rewrite—the one on Psychology and Publicity Problems. In case of an accident "The newspapers will get the information first from 'tips' and will then call the physician to get the 'gory' details. The only safe answer is, 'No comment, call the public relations officer.'" I do think that we ought to be as informative and helpful to newspaper reporters as we can. I also think that the ideal industrial physician makes the ideal public relations officer.

Having combed out all these defects, I'd like to epitomize this book as a valuable view of nearly the whole of an industrial physician's obligatory information about radiation hazards in a space small enough that he will probably read all of it.

R. R. NEWELL, M.D.

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SHAW'S TEXTBOOK OF OPERATIVE GYNAECOLOGY—Second Edition—Revised by John Howkins, M.D., M.S. (London), F.R.C.S. (Eng.), F.R.C.O.G., St. Bartholomew's Hospital, University of London and University of Cambridge. The Williams & Wilkins Company, Baltimore, 1960. 484 pages, $20.00.

In the preface to this second edition Howkins, gynecologist at St. Bartholomew's Hospital, says he has undertaken the task of revision as a gesture of gratitude to his former chief, who at his death bequeathed to him the editorship of future editions. Some chapters have been extensively revised and a few new ones added. It was the editor's purpose to describe only those operative techniques which he and his colleagues consider to be most acceptable and which they have personally found to be useful.

After several introductory chapters dealing rather sketchily with pre-operative study and preparation, anesthesia, and postoperative problems, the major portion of the book is devoted to well illustrated descriptions of all the common gynecological operations and a few uncommon ones. Two short chapters are concerned with operative injuries of bladder, ureter and intestine, as well as the more frequent intestinal lesions encountered in the course of gynecologic surgery. Cesarean section is considered briefly, and there is a chapter by I. G. Williams, a radiotherapist, on radiation for carcinoma of the cervix, endometrium, vagina and ovary. The final page of the text contains directions for the surgical management of cardiac arrest.

This book is a blending of textbook and surgical atlas, but certainly its usefulness in this country will be largely as an atlas. The illustrations by Leslie Caswell are superb examples of the medical illustrator's art and may be recommended to all residents in gynecology and to others interested in the technical details of gynecologic surgery.

CHAS. E. MCLENNAN, M.D.

EMERGENCY SYNDROMES IN PEDIATRIC PRACTICE, THE—Alfred J. Vignec, M.D., Clinical Professor of Pediatrics, New York University, College of Medicine, New York, N. Y.; Medical Director and Pediatrician in Chief, New York Foundling Hospital, New York, N. Y.; and Director of Pediatric Division, St. Vincent's Hospital, New York, N. Y. Landsberger Medical Books, Inc., 51 East 42nd Street, New York, N. Y., 1959. 382 pages, $9.00.

This book is intended for the practicing physician who in his day to day practice encounters problems in infants and children that require immediate attention. The author recognizes the dilemma that is presented when one has to treat while at the same time trying to establish the diagnosis. He directs his attention to both phases of such a situation.

There are chapters on the newborn, respiratory tract, cardiovascular system, the gastrointestinal tract, hematopoietic system, central nervous system, metabolic disorders, the use of steroids, poisoning, the premature and allergy. The covering of the acute emergency situation in each of these sub-divisions is thorough, readable and to the point, albeit at times controversial. The illustrations employed are entirely those of roentgenograms and are unfortunately of poor quality. The volume is recommended for those who see a large number of acutely ill infants and children.

William C. Deamer, M.D.

* * *

MEDICAL LICENSURE EXAMINATIONS (Rypin's)—Topical Summaries and Questions—9th Edition—Walter L. Bierring, M.D., M.A.C.P., M.R.C.P., Edin. (Hon.), Director, Division Gerontology, Heart and Chronic Diseases, Iowa State Department of Health; Secretary-editor Federation of State Medical Boards of United States; Professor of Medicine Emeritus, State University of Iowa, College of Medicine; and former Iowa State Commissioner of Health. With the Collaboration of a Review Panel. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1960. 805 pages, $11.00.

The ninth edition of Rypin's Medical Licensure Examinations has been "thoroughly revised and updated" since its last edition in 1957. The text is in two principal sections, Part I, the basic medical sciences and Part II, the clinical sciences. It is evident on reviewing the book that "every effort has been made to treat as concisely as possible those portions of the medical curriculum generally selected for use by the various examining boards."

The introductory chapter describes the methods used now in the examinations and gives some examples of the objective multiple choice written tests as well as examples of questions incorporating a patient problem.

Because of the vast amount of information that has been crammed into a total of 787 pages, there is naturally limitation in what can be presented on each topic, but even though many are discussed in outline form only, much is brought to the attention of the reader for further study if necessary.

There are a few areas in the book where some additional information or a reference to an authoritative work or textbook would seem desirable in order to help the student's grasp of the subject. For example, in the discussion on the respiratory system, it undoubtedly would be of value to have the normal pulmonary function tests tabulated along with results of tests of a few pathological conditions such as emphysema or fibrosis of the lungs. Or, in the part on cardiac surgery, a reference to some special articles giving the most recent experiences with this pioneering work would help the student. The few lines on electrocardiography are too brief to be of much help.

The chapter on psychiatry is very good and has a short, excellent list of references. This is the only chapter in the text that provides such supplementary information.

These criticisms are meant to be constructive suggestions and are in no way critical of the excellent manner in which the majority of topics are discussed. Examples of information concisely provided are the paragraphs on blood types, on leukemias, and on antibiotics.

In conclusion it can be said that this volume provides excellent up-to-date information on all divisions of medical science and clinical medicines; that it might in some way strengthen a few topics that are of special interest today; but the information that has been condensed in this text will serve the student well who is preparing for examinations for licensure and is an excellent review for any physician.

Henry Gibbons, III, M.D.

* * *

INJURIES OF THE BRAIN AND SPINAL CORD AND THEIR COVERINGS — 4th Edition — edited by Samuel Brock, New York University. Springer Publishing Company, Inc., 44 East 23rd St., New York 10, N.Y., 1960. 739 pages, $18.50.

This volume on injuries of the brain and spinal cord and their coverings edited by Samuel Brock is the 4th edition since the original edition that appeared 20 years ago.

Chapters have been contributed to by 31 different authors, all of whom have national and international prominence.

In my opinion this book would be of great value to every medical library and particularly to the neurosurgeon, the neurologist, the general practitioner, the internist, and the orthopedist.

Of particular interest is the chapter on simulation (malingering) by Dr. Keschner. And also the chapter on the electro-encephalogram in case of a head injury by Dr. Hoefer.

Every phase of injury regarding this subject has been adequately covered. In my opinion, I would regard this as the leading volume on trauma of the nervous system.

Robert F. Palmer, M.D.

* * *

PHYSICIAN'S HANDBOOK—11th Edition—Marcus A. Krupp, M.D., Associate Clinical Professor of Medicine, Stanford University School of Medicine, Stanford; Director, Palo Alto Medical Research Foundation, Palo Alto; Norman J. Sweet, M.D., Associate Professor of Medicine, University of California School of Medicine, San Francisco; Ernest Jawetz, Ph.D., M.D., Professor of Microbiology and Lecturer in Medicine and Pediatrics, University of California School of Medicine, San Francisco; and Charles D. Armstrong, M.D., Assistant Clinical Professor of Medicine, Stanford University School of Medicine, Stanford. Lange Medical Publications, Los Altos, Calif., 1960. 547 pages, $3.50.

The Physician's Handbook is essentially a compilation of those diagnostic and therapeutic facts and procedures which the authors feel to be of greatest daily interest and value to the student and practitioner of medicine. For this, its eleventh edition, it has been thoroughly revised and reorganized. There are two new chapters on emergency medical examination and chemical analysis of blood and body fluids.

By title and by what it contains this is literally a handbook—handy to have, to carry, to use. It tells the student or practitioner what to do and how to do it. Its 547 pages and the covers too are jam-packed with handy, useful information. As an inexpensive paper-back, kept remarkably well up to date, for the house officer's pocket or the physician's bag this reviewer does not know of a superior volume.

Edgar Wayburn, M.D.

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17. Lorber, S. H., and Shay, H.: Fed. Proc. *12*:90, 1953. 18. Johnston, R. I.: J. Indiana M. A. *46*:869, 1953. 19. Marien, B., Webster, D. R., and Tidmarsh, C. J.: Gastroenterology *24*:200, 1953. 20. Hardin, J. H., Levy, J. S., and Seager, L.: South. M. J. *47*:1190, 1954. 21. Sleisenger, M. H., Eisenbud, M., and Almy, T. P.: Gastroenterology *27*:829, 1954. 22. Weiss, S.: Am. J. Gastroenterology *23*:69 (Editorial) 1955. 23. Illingworth, R. S.: Lancet *2*:1119, 1959. 24. McHardy, G. G., and Browne, D. C.: South. M. J. *45*:1139, 1952. 25. Miller, B. N.: J. South Carolina, M. A. *48*:1, 1952.

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Salk Vaccine More Effective With DTP Shot

(Continued from Page 38)

ule was adopted because it is recommended for primary immunization with the DTP vaccine.

For comparative purposes, the polio vaccine was administered according to the same schedule. Therefore, it was considered as a primary vaccination since it is generally acknowledged that polio immunization should not be considered complete until a reinforcing dose is given six months after the first series of injections.

The effectiveness of the vaccines was based on the level of antibodies in blood specimens taken before and after the injections.

The article was written by D. E. Bordt, Ph.D.; Joseph W. Whalen, Ph.D.; Philip A. Boyer, M.D.; A. R. Pursell. B.S., and Francis P. Staffieri, B.S.

Studies Support Immunity Theory In Infectious Hepatitis

Studies reported today support the theory that immunization against infectious hepatitis may be achieved with gamma globulin.

The studies were reported by Drs. Saul Krugman, Robert Ward, Joan P. Giles, and A. Milton Jacobs of New York City in the Oct. 15 *Journal of the American Medical Association.*

The results indicated that gamma globulin was able to suppress the symptoms of hepatitis, mainly jaundice, although it did not prevent infection by the hepatitis virus.

"Measles, modified by gamma globulin, is the obvious parallel to be drawn," the *Journal* commented editorially. "If it can be shown that 'modified hepatitis,' i.e., without jaundice, is as benign as modified measles and is also followed in most cases by immunity, then this method of artificial active immunization against infectious hepatitis should be recommended."

Infectious hepatitis is caused by a virus entering the body through the mouth, nose, or throat. The onset usually is sudden with chills, fever, nausea. diarrhea, and in a few days, jaundice.

The studies were conducted at a children's institution, the Willowbrook State School, Staten Island, N. Y., where the incidence of hepatitis was high.

One study showed a 30-fold decrease in the incidence of hepatitis with jaundice for a five-month period following inoculation with gamma globulin.

In another study of a small group, it was found that infectious hepatitis occurred among children inoculated with gamma globulin although no symptoms of the disease were apparent. A larger group must be studied to determine the accurate incidence of hepatitis without symptoms following gamma globulin inoculation, the researchers said.

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Vitamin B-1	2 mg.
Vitamin B-2	2 mg.
Vitamin B-6	0.8 mg.
Vitamin B-12 (Cobalamin conc. NF)	2 mcg.
Folic Acid	0.25 mg.
Niacinamide	10 mg.
Vitamin K (Menadione)	0.25 mg.
Rutin	10 mg.
Sodium Molybdate	3 mg.
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Iodine (Potassium Iodide)	0.15 mg.

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Goiter Should Not Cause Cancer Fear

Goiter is a "benign process" that should not be feared as a sign of cancer of the thyroid, according to three Boston physicians.

A report based on an analysis of 230 patients with simple goiter is contained in the Oct. 1 *Journal of the American Medical Association.*

The patients were observed for periods of many months or several years between 1945 and 1958. They were treated with thyroid hormone.

Goiter is an enlargement of the thyroid gland located in the throat most often caused by an excess secretion of the hormone known as thyrotropin by the pituitary gland located in the head. The thyroid hormone inhibits the production of thyrotropin.

The study showed that about one-third of the goiters completely regressed, one-third were reduced in size, and the remainder changed little or not at all. Surgery was performed in only two patients.

"These observations give further confirmation to the effectiveness of thyroid in the treatment of simple goiter," the authors said.

"In recent times this form of treatment has usually been greeted with skepticism and, since the wave of concern regarding the possibility that goiter or nodules may herald thyroid cancer, has been considered actually to be dangerous.

"In the long experience covered by this study and the larger experience with patients cared for by their own physicians, there has been no instance of a further growth of a goiter or of a nodule after thyroid therapy was instituted in effective dosage.

"The consistent finding that thyroid nodules and simple goiter are reduced in size or disappear in about two-thirds of cases when thyroid is given makes it safe to conclude that goiter is a benign process.

"The observation that further enlargement did not occur in any case strengthens the view that fear of carcinoma [cancer] of the thyroid, so prevalent in the United States, has little basis in fact."

The article was written by Drs. E. B. Astwood, Carl E. Cassidy, and G. D. Aurbach. Drs. Astwood and Cassidy are associated with the New England Center Hospital and Tufts University School of Medicine. Dr. Aurbach is now at the National Institutes of Health, Bethesda, Md.

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Babies Under Three Months Should Be Upright When Bottle-Fed

Babies should be bottle-fed in an upright position during the first three months of life to prevent an infection of the ear.

"A supine position of an infant while bottle feeding is a predisposing factor in inflammations of the middle ear cleft," according to an article in the October *Archives of Otolaryngology,* published by the American Medical Association.

Dr. R. Bruce Duncan of Wellington, N.Z., author of the article, said milk had been found in the cleft, or cavity, of the middle ear in such cases.

This results from a sudden gush of milk from the bottle which the baby cannot always prevent from entering the postnasal space and nose, he explained. This problem persists because no bottle-nipple combination has yet been devised that can adapt perfectly to the infant's needs, he said.

On the other hand, he added, a mother's breast is adaptable and it is uncommon to hear of, or observe, this ear infection in a totally breast-fed baby.

Dr. Duncan said he believed ear infections caused by milk are "a frequent type" of middle ear infections in bottle-fed infants.

"Reflux of milk into the postnasal space can occur in any position in which the child is held, but this is probably a very minor cause of middle ear inflammation when the upright position is used," he said.

Upright bottle-feeding was recommended for:

—Babies up to the age of three months.

—All infants in hospitals.

—All premature infants.

—When a baby's nose is blocked by allergy, bacterial, or virus infection.

—When an older child has had an inflammation of the middle ear.

Dr. Duncan based his recommendations on a survey of 242 babies.

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Suntan Pills Should Be Used Solely for Medical Reasons

Suntan pills should be used solely for medical reasons, according to three Boston dermatologists.

Drs. J. Donald Imbrie, Lester L. Bergeron, and Thomas B. Fitzpatrick reported on pills containing the drug methoxsalen in the October *Archives of Dermatology,* published by the American Medical Association.

They said they found in a study of 40 persons that "methoxsalen increases the suntanning response in normal men and women."

"No unpleasant side-effects or severe burning occurred in our subjects because all subjects followed a sun exposure guide," they pointed out. "This guide suggests graduated increments of solar exposure."

The authors stressed that methoxsalen is not a cosmetic but a potent drug to be used under the direction of a physician.

"There is now enough evidence to make a claim that methoxsalen can accomplish an increase in solar tolerance," they said.

"Methoxsalen is advocated as an orally administered drug to increase the tolerance of skin to sunlight in individuals who do not have adequate natural protective mechanisms.

"We urge that methoxsalen be given only to patients who understand its indications and hazards and for a medical (not cosmetic) indication."

Methoxsalen, introduced in 1953, enhances the dark color in the skin. Oral administration of the drug decreases the redness of the skin resulting from the sun's rays. But application to the skin increases this reaction.

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Supplied: bottles of 100 white scored tablets.

References: 1. Spielman, A. D.: In press. 2. Schwartz, E., et al.: Am. Pract. & Digest Treat. 7:585, 1956. 3. Ogden, H. D., and Fuchs, M.: J. Louisiana M. Soc. 111:175, 1959. 4. Drill, W. A.: Pharmacology in Medicine, New York, McGraw-Hill Co., 1954, p. 41.

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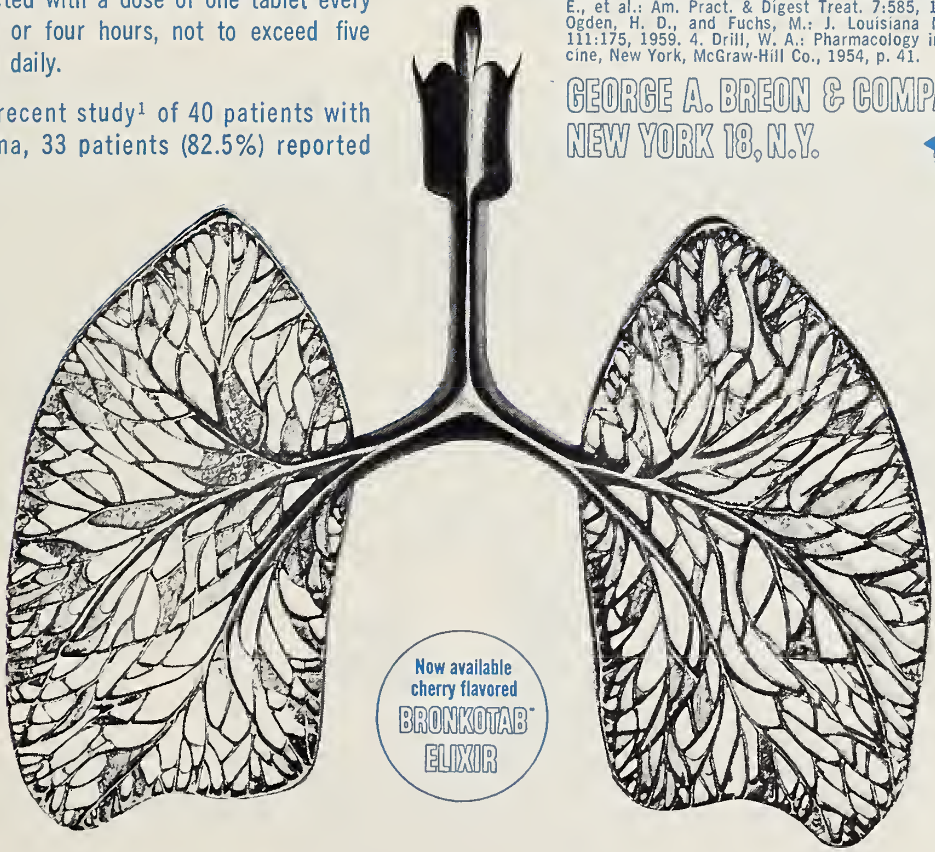

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Mobile Operating Rooms Urged for Emergencies

Mobile operating rooms that could go to the aid of heart attack victims have been recommended by two Cleveland surgeons.

Drs. Claude S. Beck and David S. Leighninger, writing in the September 10 *Journal of the American Medical Association,* suggested that mobile units be sent to victims whose hearts are revived by the open chest, manual massage technique.

The purpose of the mobile operating unit would be to restore the patient's heart to a normal rhythm and close the chest at the scene of the emergency.

Success is "more likely" if the operating room with trained personnel is moved to the victim instead of the victim being moved to the hospital, they said. Artificial respiration, essential to the survival of the patient, may be interrupted while he is being transported to the hospital, they pointed out.

The two surgeons made the recommendation after discussing the incidence of death in "hearts too good to die." They said a two-year survey of 500 heart attack victims listed by the Cuyahoga County Coroner's office, Cleveland, showed that in 63 per cent of the cases there was no evidence of sufficient heart damage to cause death.

"These figures indicate the size of this problem," they said.

They explained that a good heart could fail when its supply of oxygen is cut off (anoxia) or when its oxygen becomes unequally distributed causing a convulsive beat (fibrillation). For example, anoxia can be caused by suffocation, choking, or drowning and fibrillation can be caused by lightning striking the body.

When a structurally sound heart stops beating, they said, it may need only a "second chance" to cheat death. The cardiac massage technique is becoming increasingly successful in surmounting the temporary difficulty of the healthy heart, they said.

Dr. Beck is professor of cardiovascular surgery and Dr. Leighninger is senior instructor in surgery, cardiovascular section, Western Reserve University.

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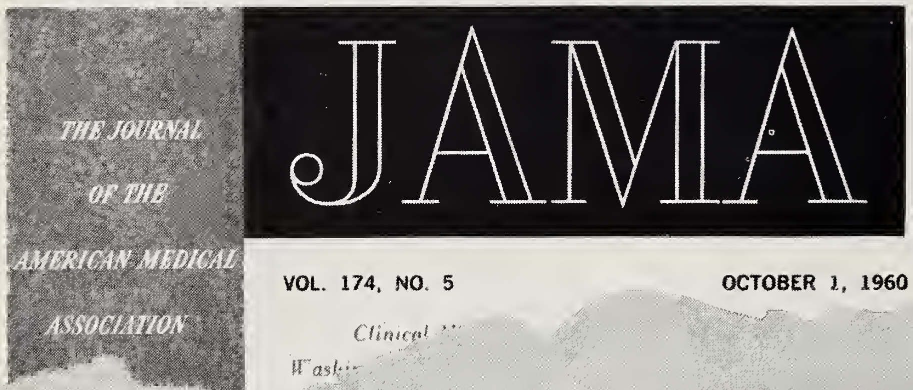

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

JAMA

VOL. 174, NO. 5 OCTOBER 1, 1960

newest J.A.M.A. paper[1] reports

DB

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Suntan-Producing Lotions Appear Harmless

The new suntan-producing lotions appear to be harmless, researchers reported recently.

Two separate studies on the effects of such lotions are contained in the October *Archives of Dermatology*, published by the American Medical Association.

Both groups of researchers studied the effects of "Man-Tan," which is typical of the tanning lotions containing dihydroxyacetone (DHA). It is the DHA which is able to tan the human skin without exposure to the sun.

Drs. Saul Blau, Norman B. Kanof, and Louis Simonson of New York City, in a preliminary report, said DHA produces no inflammatory reaction after 30 days of use. They also reported that it offers no protection from the ultraviolet, or tanning, rays of the sun.

Drs. Howard I. Maibach and Albert M. Kligman of Philadelphia said their study also showed that "the material appears innocuous."

"No instances of sensitization or irritation were encountered," they said.

The Philadelphia group also found that the application of the product "neither increased nor decreased" the tanning response of the skin to ultraviolet rays.

Commenting on the use of the lotion by 35 persons, they said:

"In general, the depth of color directly correlates with the thickness and compactness of the stratum corneum [the outer layer of the skin]. Accordingly the palms and soles stain deepest.

"The face, as a rule, was less susceptible than the extremities. Individual variation was great. Smooth unblemished skin takes the coloration best. Older senile skin often acquires a mottled and irregular shade. Because of the vast structural differences of the various parts of the face (nose, ears, and forehead), it is extremely difficult to obtain a uniform tone."

Both groups reported some success in using the lotion to treat conditions in which areas of the skin had lost their natural color.

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References: 1. Spielman, A. D.: In press. 2. Schwartz, E., et al.: Am. Pract. & Digest Treat. 7:585, 1956. 3. Ogden, H. D., and Fuchs, M.: J. Louisiana M. Soc. 111:175, 1959. 4. Drill, W. A.: Pharmacology in Medicine, New York, McGraw-Hill Co., 1954, p. 41.

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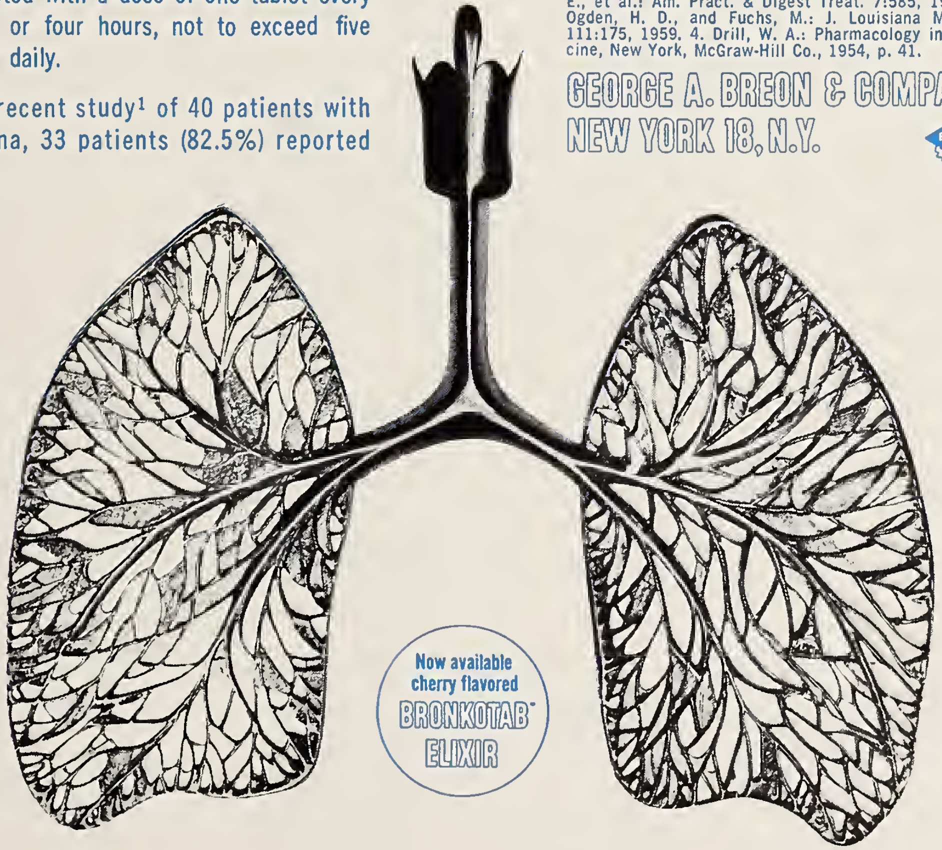

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Study Indicates Some Fats Do Not Gum Up Blood

A new study indicates some fats do not increase the viscosity of the blood, a factor implicated in the development of blood clots which cause heart attacks and strokes.

Some investigators have suggested that a high level of fats in the bloodstream might be a factor in the development of blood clots by increasing the adhesiveness of red blood cells, slowing the circulation and increasing blood viscosity. Earlier experiments with dogs and hamsters indicated that intravenous administration of fats did increase the viscosity of the blood, i.e., made it more sticky and gummy.

However, a study by Drs. Martin A. Shearn and Aristides Gousios, Oakland, Calif., reported in the November *Archives of Internal Medicine*, published by the American Medical Association, indicates that this may not hold true in human beings. Their study involved 13 human subjects in whom fats also were administered by injection.

"The blood lipid [fat] levels increased in each experiment, reaching in some instances a threefold increase," they reported. "In spite of the magnitude of this rise in total lipids, there was no significant change in the viscosity of the blood."

The authors said their study differed from the animal studies because their method reflected the viscosity of the blood in medium-size vessels, where most blood clots occur in man, while the other studies reflected the viscosity in the small blood vessels.

"In view of conflicting reports regarding the role of cholesterol and other fats on blood viscosity, studies are in progress to determine whether ingested fats or combinations of intravenously administered lipids other than that used in the present study cause a change in blood viscosity," they added.

The authors are associated with the department of medicine, Permanente Medical Group, Kaiser Foundation Hospital.

258 Items Recovered from Man's Stomach

A total of 258 objects were recovered from the stomach of a 56-year-old man at the Brooklyn, N.Y., State Hospital, it was reported in the *Journal of the American Medical Association.*

The identifiable objects and "an amorphous mass of eroded metal sludge" weighing a total of three pounds, 1¼ ounce were removed by surgery.

Among the 258 items were 26 keys, 3 sets of rosary beads, 16 religious medals, 1 bracelet, 1 necklace, 3 metal chains, 1 beer-can opener, 1 knife blade, 39 nail files, 4 nail clippers, 3 pairs of tweezers, and 88 assorted coins.

Despite the fact that a large amount of iron was oxidizing in his stomach, the patient was suffering a moderate anemia, the article said.

The presence of the objects was discovered during a physical examination of the man, a mental patient at the state hospital since 1936, after his ankles became swollen.

The operation was reported by Drs. Alan A. Kane, Benjamin Ginn, and Bernardo A. Mora Jr., Brooklyn.

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Periodic Inventory Urged For Medicine Cabinet

Medicine cabinets should be cleaned out regularly to prevent the dangerous accumulation of old medicines.

A periodic inventory and a good bonfire are advisable, according to the *Journal of the American Medical Association.*

A *Journal* editorial stressed the danger of drug-faddism and self-medication tied to over-the-counter purchases and the lending of medicine among neighbors and friends. It criticized the practice of saving prescriptions even though salves have leaked through their cartons, sedatives have become a bit mixed up, and labels have dimmed with age.

"Proper medicines tip the scales in illness, and they should be obtained professionally and used according to directions," the editorial said.

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Dynamics and Management of Self-Induced Eruptions

MAXIMILIAN E. OBERMAYER, *M.D.*, Los Angeles

• Self-induced eruptions are always expressions of an emotionally disturbed person. They cover a wide variety of injuries and include aggravation of preexisting dermatoses, neurotic excoriations, mucocutaneous changes from compulsive movements, factitial dermatitis and trichotillomania. The emotional disturbances in such patients range from mild psychoneuroses to severe psychoses. Attention should be focused primarily on the emotional disturbance. The management of psychotic patients is the domain of the psychiatrist. But those unsuitable for psychiatric care and persons with mild psychoneuroses—who fortunately constitute the majority among patients with self-inflicted eruptions—should remain with their dermatologist or general physician and get from him effective supportive psychotherapy in addition to such treatment for the self-induced damage to the skin as may be indicated.

THE VARIOUS KINDS OF true dermatoneurosis may be classified as: Erythrophobia (abnormal blushing): hyperhidrosis; phobias; self-induced eruptions; trichotillomania; delusion of parasitosis; dermatologic hypochondriasis; stigmatization.

For discussion with regard to dynamics and the management of patients with these conditions, I have chosen in particular the self-induced eruptions, trichotillomania and delusion of parasitosis. For a clearer understanding of what management involves, I will give first a brief definition and illustrations of the clinical entities from the dermatologist's point of view.

I have found it convenient to classify the self-induced eruptions as follows[3]: Aggravation of preexisting dermatosis: neurotic excoriations; mucocutaneous changes owing to compulsive movements: factitial dermatitis.

AGGRAVATION OF PREEXISTING DERMATOSIS

The observation that patients with psychocutaneous excoriation syndromes tend to express aggressiveness more masochistically than others[5] and the preponderance of the anxious obsessional personality trait in patients with cutaneous disease[2] account for the frequently noted self-induced aggravation of dermatosis in such patients. The obsessional patient is overconscientious and preoccupied with cleanliness, order and routine. He makes a ritual of the prescribed therapeutic measures; thus he is apt to overtreat himself with resulting aggravation of the dermatosis. This is especially true of the patient with neurodermatitis. But the obsessional trait is shared by many persons who have cutaneous disease; self-induced aggravation is commonly encountered in inflammatory chronic dermatosis not ordinarily thought to be associated with psychic factors. Therefore the obsessional trait and the neurosis of which it is a symptom are of considerable importance in contact dermatitis, especially the occupational variety.

Clinical Professor and Chairman, Section of Dermatology, School of Medicine, University of Southern California, Los Angeles 33.

Presented as part of a Symposium on Psychocutaneous Medicine before the Section on Dermatology and Syphilology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Overtreatment and rubbing usually is rationalized by the patient as a necessary part of therapy.

NEUROTIC EXCORIATIONS

A more severe form is termed neurotic excoriations, although there is no fixed point at which simple self-aggravation ends and neurotic excoriation begins. There are many transitional forms. The varying degrees of excoriation in acne vulgaris, from slight to severe, are illustrative. In this common disease of the adolescent, aggravation of the blemish occurs because of constant squeezing, pricking and chin-fondling of the self-conscious patient. In cases in which the disease actively continues beyond adolescence, the inflicted damage is sometimes more severe, resulting in unsightly scars.

The most typical lesions are produced by the patient with his fingernails because of intolerable itching or burning or an uncontrollable desire to dig into the skin in certain regions; the usual sites are the extensor surfaces of the arms and forearms, the thighs and legs, the face, and the upper part of the back.

The excoriations, most often about 0.5 cm. in diameter, are covered with sanguineous crusts and surrounded by an erythematous border. The crust eventually falls off, leaving a pink scar—which later becomes pale—with a hyperpigmented border. Lesions in all phases of development are present simultaneously. Neurotic excoriation should not be confused with factitial dermatitis: in the latter the patients will not admit to having produced the lesions unless confronted with irrefutable evidence, while those with neurotic excoriations readily admit what they have done but add that they simply cannot help digging at the skin because of intolerable discomfort.

To the patient the important feature is discovery of an irregularity of his skin, a "core," a "bump" or a "pimple" which he is compelled to remove; often follicular plugs are the object. If he accomplishes removal, he experiences relief and satisfaction. Minimal as may be the cutaneous changes that preoccupy the patient, there always is some slight abnormality of the skin to which his neurosis becomes fixed.

The average patient with neurotic excoriations does most of his digging into the skin before going to bed, and spends as much time—a few minutes to several hours—in the performance as is required for relief of his tension. Although aware of the irrational and self-destructive nature of his behavior, he is unable to discontinue the habit for long. On voluntary attempt to stop this harmful practice, he builds up tension to an intolerable point and is driven back to the self-damaging activity. The tension and discomfort are similar to that suffered by obsessive-compulsive patients when unable to complete their rituals or ceremonials.

A complex pattern of reactions underlies this symptom rather than a single neurosis or psychosis. It is felt that these cutaneous manifestations are end results of a specific type of compulsive behavior, the origins of which lie in early fears and unexpressed rage toward a prohibitive and punitive parent. The self-inflicted lesions represent a variety of emotional disturbances: repressed rage, vindictiveness and hostility toward a childhood authority and later to the frustrating outside world; guilty fear, self-punishment, and self-destruction for attempting to reject that authority; finally, riddance of dirt, excreta, smegma, and any form of cutaneous disfigurement, the latter representing contamination, badness, and a form of punishment for transgression. The extent of the cutaneous lesions and the degree of self-destruction are in proportion to the distortion of the personality.

MUCOCUTANEOUS CHANGES FROM COMPULSIVE MOVEMENTS

Injury to the skin from compulsive movements is well known to occur in animals. "Wolf-biters" among dogs and "tail-chewers" among monkeys are examples. Nailbiting and knuckle-biting, the latter leading to the formation of the so-called knuckle pads, are commonly encountered in persons of all ages.

The biting, chewing or sucking habit always has an erotic component. The elongated shape or leathery consistency of one of the small labia on the vulva, the thickening of the clitoris and of the tissue surrounding it, as well as similar changes of the perineum in persons of both sexes, are eloquent manifestations of masturbatory practices. Thickening of the mucocutaneous tissue of the lips or tongue in the form of a circumscribed spot as a result of compulsive manipulation has given rise to confusion with leukoplakia. It is not uncommon to find cutaneous changes in feebleminded persons who have the habit of frequently biting themselves with a violent chewing motion on the forearms, hands and fingers, resulting in areas of thickening, hyperpigmentation and hypertrichosis. It is believed that the hypertrichosis is produced by the intermittent pressure associated with friction.

Compulsive movements may lead also to development of contact dermatitis—for example, nickel dermatitis of the lower lip produced by the patient's rubbing her wedding ring against that part of her face.

FACTITIAL DERMATITIS

The term *factitial dermatitis* is loosely applied to any kind of self-inflicted injury to the skin. A preferred usage limits it to cases in which the patient consciously produces the artifacts but denies his responsibility for them, the denial distinguishing the disorder from neurotic excoriations.

Diagnosis is determined by the character of the lesions and by exclusion of the kinds of dermatosis with established characteristics. The lesions usually are in a region readily reached by the right hand (or, in left-handed patients, the left hand). Their artificial appearance arouses suspicion; the pattern is distinctive and bizarre, and differs from that encountered in other kinds of dermatosis—features immediately apparent to the expert. While the changes may be due to a chemical or thermal burn, they frequently are of other traumatic origin. Cutaneous artifacts produced by an instrument often are of regular—even geometric—arrangement, a feature most uncommon in spontaneous eruptions. Chemical burns, likewise, frequently are of a regular pattern: A liquid may produce streaks so that linear extensions of the main lesion often are seen, as would result were a drop of a chemical to run downward on the surface. Sudden appearance overnight of a full-blown lesion or lesions should arouse suspicion of factitial eruption.

When the suspected lesions are located on the extremities, application of a simple Unna's zinc-lime gelatin or other occlusive dressing—if the eruption is self-produced—will prevent further infliction and permit preexisting lesions to heal in the protected areas.

However, differential diagnosis from spontaneous inflammatory dermatosis is at times exceedingly difficult.

The psychic importance of factitial dermatitis is that although the patient consciously produces the lesions, he is not aware of the basic reasons for this self-destructive behavior. Such persons always deny any part in causing the eruption unless they are caught in the act. Factitial lesions usually are in a prominently exposed area, psychologically chosen to enable the patient to obtain attention, sympathy, pity or compensation, or to use as a device for escaping responsibility.

The patient who presents factitial dermatitis is, inherently, unable to face or admit inadequacy. The lesions serve to rationalize his belief that he has failed to achieve success in life. The majority of patients seen with this condition are persons of middle age who either have not attained their goals or have slipped far below their set standards, socially and economically; they have given up the competitive struggle; they save face by having a physical illness.

Psychiatric studies have shown that patients with factitial dermatitis are of low intellectual level and therefore—in contrast to patients with neurotic excoriations—rarely amenable to accepting psychiatric help, even if it is offered. Most observers agree that it is bad therapy to unmask those who perpetrate self-infliction without first encouraging them and building them up psychologically. These patients are unaware of the motivation of their self-destructive behavior: sudden exposure may deprive them of protective covering at a crucial age when they are unable to meet competition. Because of their emotional immaturity, deep psychotherapy may not be indicated in such patients.

TRICHOTILLOMANIA

Trichotillomania is the abnormal and uncontrollable desire to pull out one's own hair. The patients are predominantly children, and the condition probably is more common during early childhood than is generally recognized. So many hairs may be pulled out that some areas may be virtually denuded, or the hairs may appear to be broken off. The scalp and the eyebrows are most frequently attacked, although the pubic hair is not exempt. Subjective symptoms are usually absent, but intense pruritus has been reported. The artificial appearance and irregularity of the bare or sparsely covered patches aids diagnosis.

The psychiatric mechanism appears to differ according to the age groups and the level of the emotional disturbance. In neurotic children trichotillomania may represent anger against a rejecting parent which has been turned against the self.

Trichotillomania of the eyebrows, eyelashes or pubes may occur as a mild neurotic symptom, however. The patients fondle, smell, chew or bite the extracted hairs, or roll them on the tongue and experience sensual pleasure in doing so; in some instances it may be considered a masturbatory substitute. Trichotillomania of this type usually subsides as the patient becomes able to work out his psychologic problem.

Conflicts in the sexual sphere and feelings of guilt appear to be predominant in patients with this manifestation.

In adults severe trichotillomania is often associated with schizophrenia and other forms of psychosis. The prognosis depends entirely on the background of the case. In schizoid, paranoid or highly narcissistic persons it is poor, while a good prognosis is the rule in patients whose emotional development is more mature.

DELUSION OF PARASITOSIS

The delusion of parasitosis is a mental disorder characterized by an unshakable false belief that live organisms, such as mites or insects, are present in the skin.

In some patients demonstrable changes in the skin do not occur; in others, typical neurotic excoriations are present. In elderly patients the disorder sometimes is associated with senile pruritus. The principal complaints are itching, biting, stinging, burning and crawling sensations. The patient may produce "evidence"—small objects which he claims to have rubbed off or dug out of his skin, consisting usually of epidermal debris or bits of lint from the clothing, but occasionally a bottle filled with ants, small beetles or other insects that obviously could never have come from within the skin. Various modes of extraction are used by the patients to rid themselves of these supposed parasites—digging with the fingernails, needles, pins, tweezers, scissors, scalpels and knives, plus sterilization with various antiseptics and caustics. As a result of all this excoriation and self-destruction of tissues, varying degrees of infection and scarring ensue. In most patients the lesions are noted at first on the exposed parts of the body, particularly the face, neck, and arms; later they are produced on other parts of the body—the chest, axillae, groin and scalp.

The emotional disturbances which underly the symptom of delusion of parasitosis are toxic psychosis, schizophrenia, involutional melancholia and paranoia. When proper psychiatric care is given the prognosis is good in the case of toxic psychosis, poor in schizophrenia and involutional melancholia, and almost hopeless in paranoia. Paranoid patients are not suitable subjects for psychoanalysis. These unfortunate persons should be placated, and treated gently and tolerantly, without trying to reason with them, to confer insight or to change their intrinsic nature. Rather, extrinsic factors, such as environmental influences, should be manipulated to avoid areas of conflict for the patient.

At times the mental disturbance of pellagra takes the form of delusion of parasitosis and disappears with appropriate therapy. This is important because many patients with this delusion have deficient diets. Investigation of dietary habits is always indicated.

Occasionally, patients are observed in whom the fear of infestation proves to be a phobia and not a delusion. The distinction is important. Phobic patients have a persistent fear of contamination, although after being presented with laboratory proof of its fallacy they are able to recognize the irrational nature of their fear. However, because the fear is based on unconscious conflicts and is therefore not amenable to logical argument, it persists in the same or a different form. The patient with a delusion, on the other hand, remains convinced, regardless of proof, that his fears are justified. Psychotic processes, to which delusions are related, are based on a regression to a very early stage of psychosexual development, when the infant is unable to discriminate between reality and fantasy. Phobias are related to a much later stage of infantile development, when the function of reality testing is much more firmly established. Hence the prognosis of a patient with a phobia is infinitely better than that of one with delusion.

All patients who appear to have a delusion of parasitosis are entitled to a routine search for parasites and treatment for any dermatosis that may be present. The absolute necessity for painstaking examination is well exemplified by reports of seemingly deluded patients who were found to be actually infested with lice or mites.

TREATMENT

In order to avoid waste of time and effort, it is necessary to decide whether it will be best for the patient that he remain with you or be referred to a psychiatrist. In answering this question I use two criteria: The degree of his emotional disturbance and his suitability for psychiatric care.

If signs of steadily deepening depression or symptoms of psychosis are evident, I refer the patient without delay. Occasionally a psychotic patient may be encountered among those with any of the previously discussed cutaneous diseases, but the incidence of psychosis is higher among those with either factitial dermatitis or delusion of parasitosis.

If the patient is deeply disturbed but not obviously psychotic, I base the decision for referral on his suitability for psychiatric care. A good candidate for psychotherapy recognizes and accepts the causal role of emotional disturbance. If he denies it and his attitude toward psychiatric concepts is hostile an attempted referral would only result in the loss of the patient.

This leaves the majority of patients with self-induced eruptions to our own combined dermatologic and psychotherapeutic management. I have frequently observed that a dermatologist, in carrying out this combined task, is apt to underrate his ability to give effective supportive psychotherapy. None of us should or would assume the role of psychiatrist without special training in that field. I would not dream of exploring the deeper layers of the patient's unconscious or uncovering repressed conflicts associated with his early life. If I were to do this I might find myself in the undesirable role of Goethe's Sorcerer's Apprentice, who found himself unable to control the forces he had unleashed.

Our main task, as I see it, is to make clear to the patient that we understand him and are sympathetic to his problem. If good rapport has been established during the first visit—and in my experience that first interview is crucial—I usually make some final reassuring comments to the patient. For example, to a psychoneurotic woman with neurotic excoriations I might say: "We both are aware that you are producing the sores yourself. We don't know yet the reason for your doing this but we shall try to find out. I think that I have given you today some food for thought. Go over our discussion in your mind and tell me, next time, any new thoughts you may have on the subject. If you are able to refrain from digging, that would naturally be desirable, but if you are not, go ahead and dig. You understand now that you are doing this to relieve tensions. Perhaps I shall be able to help you to find relief from them without destroying your skin."

When she returns I listen patiently, without interrupting, then discuss her current emotional problems without giving psychiatric interpretations of her anxieties. My weapon is the building of her ego by expressing confidence in her ability to help herself and by aiding her to deal with tensions consciously which formerly had been discharged through a behavior pattern of which she was not fully aware.

I have set myself no fixed time limit in interviewing patients. For the initial visit, because of its all-importance, I always allow at least half an hour. For patients who are sent in consultation, hence with forewarning of the likelihood of psychic factors, I allow a full hour. The time spent on subsequent visits depends on the pressure of work on that particular day, but I always try to reserve at least 15 minutes for discussion.

One must keep in mind that many of these patients are extremely sensitive and proud. While they seem to long for help and guidance, they are outraged if they discern signs of condescension.

I often find it desirable to interview the spouse or the parents to help to orient them toward the patient's problems.

In management, I distinguish between patients whose relative intelligence, basic education and capacity for insight are good and those who are deficient in these qualities. To the former I give no dermatologic therapy because that would only impede the development of insight into the purely emotional nature of their problems. For the latter some form of dermatologic treatment is essential or they will not return. I am aware of the placebo nature of such management, but I reason that it is justified so long as the main emphasis is given not to the dermatologic procedures but to the accompanying reassuring discussion. This holds especially for the elderly patient with delusion of parasitosis for whom psychiatric referral is out of the question for economic as well as medical reasons. Such a patient—usually a lone person with an inadequate diet—will profit from the injections of crude liver extract which he thinks are the real reason for his office visit.

When I feel that sedation is indicated I use it freely but never to the point of turning the patient into a vegetating animal, nor do I force it on him if he is prejudiced against "nerve medicine." Small but steady doses of meprobamate seem to serve best.

As to the value of rest, including hospitalization —which I used to espouse in the management of the neurodermatoses[11]—I have changed my mind. I have come to the same conclusions as Seitz[4] who said that nervous fatigue is not a cause of psychocutaneous disorders. Overwork is a symptom, not a cause, of chronic unresolved emotional tension. Work is salutary because it helps to relieve tension, while enforced idleness has the opposite effect. But encouraging the patient to outline a regimen that will provide for adequate sleeping hours and, if possible, a daily nap, and a sensible balance between work and play is of course highly desirable. A relaxing hobby should be active and manual, and not passive-intellectual, such as reading. Self-inflictions—to take again neurotic excoriations, as an example—are essentially tactile conditioned reflexes and it is therefore logical that the substitute should be a tactile activity. Knitting serves well for female patients, both teenagers and adults, with excoriated acne; ceramics or sculpturing are desirable substitutes for adults.

As to the results of treatment I would say that they naturally vary a great deal. Some of my patients with neurotic excoriations have stopped digging into their skins after the first interview and have remained well. I have had others who continued their self-inflictions for several months and then stopped. And I have treated others who continued to abuse their skins right up to the time of involuntary parting, and who probably still dig, under somebody else's auspices; but they are relatively few. Improvement is the rule. Even the little old lady with delusion of parasitosis who cheerfully answers my question, "And how are the bugs today?" by saying "Only a few feelers in the ears, but I got them out by the root," thus acknowledges relief obtained.

Treatment of patients with self-inflicted lesions is an intuitive and time-consuming task. Failures are inevitable. But often our efforts are successful.

3875 Wilshire Boulevard, Los Angeles 5.

REFERENCES

1. Becker, S. W., and Obermayer, M. E.: Modern Dermatology and Syphilology, Ed. 2, J. B. Lippincott, Philadelphia, 1947.

2. Hall-Smith, S. P., and Norton, A.: Psychiatric survey of a random sample of skin out-patients, Brit. M. J., 2:417, 1952.

3. Obermayer, M. E.: Psychocutaneous Medicine, Charles C. Thomas, Springfield, Ill., 1955.

4. Seitz, P. F. D.: Diagnosis and treatment of psychocutaneous disorders, G. P., 19:80, 1959.

5. Seitz, P. F. D.: Psychocutaneous aspects of persistent pruritus and excessive excoriations, A.M.A. Arch. Dermat., 64:136, 1953.

Head Injuries in Infants and Young Children

ROBERT H. PUDENZ, *M.D.*, EDWIN M. TODD, *M.D.*,
and C. HUNTER SHELDEN, *M.D.*, Pasadena

• Head injury in infants and young children may produce lesions that are relatively unique for this age group. The uniqueness is generally due to the structural immaturity of the skull, meninges and brain.

"Derby-hat" and diastatic fractures are common in this age group. Spurious meningoceles result from tearing of the dura which is closely adherent to the skull. The syndrome of "delayed" concussion is more commonly manifested in children. Extradural and subdural hemorrhage may develop from lacerations of the major venous sinuses. A classical extradural hematoma may occur in the absence of fracture across meningeal arterial channels.

The management of patients with head injury has been improved by the more frequent use of tracheotomy, hypothermic techniques and drugs of the "lytic cocktail." Solutions of urea in 10 per cent invert sugar are administered intravenously to control cerebral edema in selected patients.

Head injuries in infants and children of pre-school age have many unique features that distinguish them from those occurring in older children and adults. These differences are due largely to the structural qualities of the skull and the immaturity of the central nervous system in this age group. This report will deal with those facets of the head injury problem that are of greatest importance to the pediatrician. Particular stress will be placed on the management of "closed" injuries not requiring surgical treatment.

ANATOMICAL AND PATHOLOGICAL CONSIDERATIONS

Scalp Injuries

The abundant blood supply and inability of the blood vessels to contract or constrict allows scalp lacerations to bleed more profusely than comparable wounds in other body areas. In infants and small children the loss of blood may produce shock and necessitate emergency replacement by transfusion. Scalp lacerations usually heal by first intention if properly cleansed, debrided and sutured.

Subgaleal hematomas are often perplexing, inasmuch as their soft centers and hard, raised edges may give the impression of an underlying depression of the skull. These hematomas must be distinguished from "spurious meningoceles," which are subgaleal collections of cerebrospinal fluid. The latter are due to an underlying fracture of the skull, accompanied by dural and arachnoidal tears that permit the extracranial escape of cerebrospinal fluid. Both of these collections usually disappear with the passage of time. At times, needle aspiration may be required.

Skull Fractures

In contrast to the skull of the older child and adult, which is relatively rigid and nonyielding, the skull of the infant is elastic and subject to considerable deformation. Its vault consists of rather loosely joined flat bones separated by sutures and fontanelles. As compared with the elastic vault, the base of the skull is relatively rigid. The posterior fontanelle is usually closed at the age of two months, the anterior fontanelle between the ninth and sixteenth month. The sagittal, coronal, lambdoidal and temporosquamosal sutures are not firmly united until the child is about four years of age.

Due to the elasticity of the vault of the infant's skull, depression of bone may occur without extensive fracturing, the fracture being of the so-called "ping-pong ball" or "derby-hat" type. Because of the loose joint at the suture lines, diastatic fractures are more common in children. The infant dura is rather rigidly attached to the inner table of the skull and is, therefore, commonly torn directly beneath a fracture line. As noted previously, this often permits the escape of cerebrospinal fluid beneath the scalp, forming the so-called spurious meningocele. Dural tears involving the major venous sinuses may produce subdural and extradural hematomas.

The more serious skull fractures are those in which there is comminution of bone. These comminuted fragments are frequently driven inward, producing a simple, depressed fracture or are associated with an overlying laceration of the scalp resulting in a compound, comminuted, depressed fracture. At times, the in-driven fragments will penetrate the dura and lacerate the underlying brain.

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In general, linear fractures in infants and children do not, per se, present a problem. Unless the edges are widely separated, most linear fractures heal quickly and are no longer apparent on radiological examination in three to six months. If the fracture line crosses an arterial or venous channel, the child should be closely observed for signs of increasing intracranial pressure that signal the formation of a subdural or extradural hematoma.

Linear fractures involving the base of the skull (basal fractures) may not be apparent on either clinical or radiological examination. The diagnosis is usually established by finding leakage of cerebrospinal fluid from the nose or ear. Fractures involving the paranasal sinuses may enable air to enter the intracranial chamber and produce a pneumocele or spontaneous ventriculogram. The presence of rhinorrhea, otorrhea or intracranial air converts a simple fracture into a compound fracture and requires appropriate antibacterial prophylactic therapy.

Brain Injury

Concussion, cerebral contusion and laceration, cerebral hemorrhage and edema, and meningeal hemorrhage in its various forms are common sequelae of cranial trauma in both children and adults. However, because more of the energy of the blow is absorbed by the deformation of the skull, the brain is relatively more protected from injury in infants than in adults. Some authorities point out that for a similar reason the brain stem of infants is less vulnerable.

The most common change in the human brain resulting from a head injury is the phenomenon known as concussion. Before World War II, concussion was considered to be a mysterious disturbance of cellular function which was unaccompanied by any demonstrable pathological change in nerve cells. However, the stimulus provided by the war led many investigators to reassess the brain injury problem, particularly the nature of concussion. It has now been shown that concussion produces swelling in nerve cells, chiefly those of the brain stem's reticular formation. Intensive studies of the function of the reticular formation have disclosed that this area has a modulating and integrating effect on motor and sensory function, autonomic balance, visceral function, alertnesss and sleep and the maintenance of consciousness. The diagnosis of concussion is established if there has been a disturbance of consciousness following a head injury. This may vary from momentary confusion to coma. Children with relatively minor head injuries may have what has been termed delayed concussion. This is characterized by drowsiness, pallor, vomiting and diaphoresis, coming on several hours after the injury. In the presence of these symptoms, close observation for signs of intracranial bleeding is required even though most often the child recovers promptly. How this delayed form comes about is obscure.

Frequently, the forces involved in cranial trauma will produce gross lesions in the central nervous system, such as contusion and laceration. In severe closed head injury, the frontal and temporal poles of the brain are subject to the greatest damage. This is due to shear strains that develop in these lobes because of the rotation of the brain within the skull at the time of impact. Cerebral contusion and laceration may occur directly beneath the site of the blow (*coup* injury) or at a point directly opposite to it (*contrecoup* injury).

Edema of the brain will develop in the wounded areas. Generalized cerebral contusion may result in such widespread edema that the intracranial pressure will reach critical or fatal levels. Reduction of this edema is imperative, inasmuch as the associated ischemia may produce widespread death of nerve cells.

Persisting neurological defects will occur as a result of irreparable brain damage. These paralytic phenomena will vary, depending on the location and extent of the injury. Convulsions will develop as a late manifestation in approximately 2 per cent of patients with closed head injury and in 20 per cent of the patients in whom the brain wound is associated with dural penetration.

TREATMENT

Emergency Measures

In the management of the child with a head injury, the four major steps to be taken are: Establishment of an adequate airway followed by the administration of oxygen; control of shock; control of hemorrhage; assessment of the extent of injury.

Establishment of an adequate airway is the first and most important step. Patients with head injury commonly have respiratory obstruction due to depression of the gag, cough and swallowing reflexes coincident with the accumulation of the pharyngeal secretions. During transport to a place of treatment the child should be placed in a modified prone position to promote gravity drainage. If suction is available, a soft rubber or plastic catheter is preferable to a metal device that might contuse the throat. If these measures do not establish a good airway, direct laryngoscopy, bronchoscopy or tracheotomy may be necessary. Neurosurgeons have used tracheotomy with increasing frequency in the past decade.

Shock is uncommon in uncomplicated head injuries and, when present, is usually the result of intrathoracic or intra-abdominal injury or fractures of long bones. However, particularly in infants and small children, shock may occur as a result of loss of blood. It is good policy to start an intravenous infusion immediately in all seriously injured patients and arrange for blood typing and cross-matching on the assumption that blood replacement may be necessary.

Hemorrhage from scalp wounds may be profuse, particularly if the larger arteries have been lacerated. Bleeding from most scalp lacerations may be controlled by compression dressings owing to the fortuitous anatomical arrangement of a bony backstop afforded by the underlying skull. Hemostats can be applied to bleeding vessels and incorporated in the dressing. Scalp and other wounds should not be sutured until the condition of the child permits this measure.

Having established measures to control respiration, shock and hemorrhage, the physician can then make an assessment of the extent of injury. From the neurological standpoint, evaluation of the state of consciousness is of paramount importance. Disturbed consciousness may vary from confusion to coma. After investigation on this point, the examiner should proceed with a systematic neurological examination, the completeness of which will depend on the responsiveness of the patient. The size, equality or inequality and reaction of the pupils should be noted. Ophthalmoscopic examination is rarely helpful but may disclose acute papilledema or retinal hemorrhage. The ears and nose must be examined for evidence of leakage of cerebrospinal fluid. Seventh nerve involvement may be noted by close observation of facial grimaces. Since neck injury occurs in about 25 per cent of all patients with serious head injury, this area should be carefully examined. The extremities should be observed for signs of weakness or paralysis. Observing the movements of the restless patient often will help in this determination. In a semicomatose patient, movement may be induced by applying a painful stimulus to the hands and feet. The activity of the abdominal and deep tendon reflexes and the plantar responses should be noted. Evaluation of the various sensory functions will depend on the alertness and cooperation of the patient.

Assessment of the neurological status in the immediate post-traumatic period is of paramount importance, inasmuch as it enables the examiner to establish a baseline. A steady improvement in the state of consciousness and the disappearance of abnormal neurological signs is reassuring and usually indicates a good prognosis. Conversely, progressive loss of consciousness accompanied by pupillary inequality, hemiparesis, slowing of the pulse and respiration and an increase in pulse pressure implies that either intracranial hemorrhage or cerebral edema is developing.

Radiological examination is indicated in all patients with head injuries but is not justified as an emergency measure unless it can be done without jeopardizing the patient's chances for recovery. X-ray studies may disclose linear or diastatic fractures which may be of localizing value should an extradural or subdural hematoma develop. The pattern of simple and compound, comminuted, depressed fractures enables the surgeon to plan the operative procedure.

Lumbar puncture is not recommended as a routine diagnostic procedure in patients with head injuries. In performing this test, the attending physician wishes to determine if there is elevation of intracranial pressure and/or blood in the cerebrospinal fluid. Measurements of cerebrospinal fluid pressure are often inaccurate due to the restlessness and straining of the patient or respiratory obstruction or a block in the cerebrospinal fluid pathways. Cerebrospinal fluid blocks may occur at the tentorial notch and the foramen magnum due to shifting of intracranial structures brought about by the pressure of large subdural and extradural hematomas. If this state exists, lumbar puncture may permit further strangulation and hemorrhagic infarction of the brain stem.

In general, lumbar puncture is done to determine whether or not there is blood in the cerebrospinal fluid. Subarachnoid hemorrhage implies that cerebral contusion has occurred, which influences the prognosis and treatment. Patients with meningismus secondary to subarachnoid bleeding may be symptomatically improved by withdrawing 5 to 15 cc. of cerebrospinal fluid at intervals. However, repeated lumbar puncture does not result in a more rapid disappearance of the red blood cells.

TREATMENT

General Measures

The most important part of the program in the management of a patient with a head injury is close observation of the state of consciousness, the vital signs, the size of the pupils and movement of the extremities. The nurses in attendance should be instructed in making these observations. Oxygen and suction equipment should be available at the bedside. Routine and special orders by the physician are outlined in Table 1.

Conscious patients are given clear liquids in whatever amount they wish during the first 24 hours. At the end of this time, solid food and fluids are given as desired. In unconscious patients fluids are administered intravenously in amounts of approximately 10 cc. per pound of body weight per day.

As the state of consciousness improves gavage feedings may be started unless there is a persisting rhinorrhea, serious rhinopharyngeal injury or persistent vomiting associated with depressed pharyngeal reflexes.

Hypertonic intravenous infusions are used only if proven cerebral edema has produced a significant elevation of intracranial pressure. Hypertonic glucose and sucrose solutions are available in most hospitals. Concentrated plasma and serum albumin are effective agents but quite expensive. In recent years, intravenous administration of urea in a 10 per cent solution of invert sugar has been used with increasing frequency. It must be remembered that most of these dehydrating agents have only a temporary effect, which may be followed by a "rebound phenomenon" during which the intracranial pressure may exceed that which existed before they were administered.

Patients with head injuries are usually placed in a position of head elevation to promote venous drainage. However, some neurosurgeons prefer to keep their patients flat. Unconscious patients should have their position changed every two hours to discourage the development of skin and respiratory complications.

Drugs

Analgesics and sedatives that do not significantly impair the state of consciousness or depress respiration may be used. Aspirin may be used freely, and in general it will control headache and restlessness. For more severe pain, hypodermic injection of small amounts of codeine or meperidine (Demerol) may be required. Barbiturates are used to control restlessness. Paraldehyde administered intramuscularly or rectally is probably best for controlling extreme restlessness in children.

Antibacterial therapy is not instituted as a routine measure. It is indicated when there has been extensive wounding with contamination, in semicomatose and comatose patients with depressed pharyngeal reflexes and in patients with cerebrospinal fluid fistulas.

Anticonvulsant measures will be required to combat acute seizures. Barbiturates and hydantoin derivatives are used. It has been our policy to keep all patients with brain wounds on anticonvulsant medication for 12 to 18 months after the injury. If seizures do not develop, the dosage is gradually reduced over this period of time.

Control of Body Temperature

A significant rise of body temperature may occur in patients with cerebral contusion accompanied by hemorrhage and edema. In these damaged areas are nerve cells that will either live or die, depending on the amount of oxygen that is available to sustain their metabolic rate. Reduction of body temperature decreases the oxygen demand and the metabolic rate of these damaged cells, and reduces intracranial pressure by protecting against cerebral edema.

TABLE 1.—*Routine and Special Orders by Physician to Nurses Dealing with a Patient with Head Injury*

Routine:

1. Blood pressure, pulse and respiration rate every 30 minutes until responding—then every two hours.
2. Rectal temperature every two hours.
3. Check ability to rouse, pupils and hand grips, every two hours.
4. Elevate head of bed 10 to 12 inches.
5. Put side rails on bed.
6. Administer oxygen constantly until responding. Keep airway clear with suction.
7. Nothing by mouth.
8. Sponge body with alcohol for temperature over 102° F.
9. Sedatives and analgesics.

Special:

1. Special nurses.
2. Hypothermia routine.
3. Tracheotomy routine.
4. Antibacterial therapy.
5. Intravenous isotonic and hypertonic fluids.
6. Blood transfusions.
7. Miscellaneous.

TABLE 2.—*Lytic Cocktail for Use in Treatment of Infants and Children with Head Injuries*

1. Chlorpromazine hydrochloride. (Thorazine)
   To reduce shivering.
2. Promethazine hydrochloride. (Phenergan)
   Cutaneous vasodilator.
   Antihistaminic.
   Anticholinergic.
   Bronchial dilator.
3. Meperidine hydrochloride. (Demerol)
   Analgesic.
   Sedative.
   Spasmolytic.
   Cutaneous vasodilator.
4. Levallorphan tartrate. (Lorfan)
   Overcome drug-induced respiratory depression.

Body temperature of 102° to 103° F. can usually be reduced to normothermic levels by the use of salicylates, alcohol sponges, ice bags, ice-water enemas and the exposure of the patient undressed to air being circulated by a fan. In recent years, more vigorous hypothermic methods have been employed in the management of patients with severe head injury. These patients will often have rectal temperatures of 105° to 107° F., generalized rigidity and recurrent opisthotonic episodes accompanied by tachycardia and tachypnea. By the use of ice packs or special hypothermic apparatus the body temperature is reduced to a level of 90° to 95° F. In addition to these physical measures, the drugs of the "lytic cocktail" (chlorpromazine, promethazine, meperidine and levallorphan) (Table 2) are administered intravenously and intramuscularly to enhance the effect of the externally applied cold.

Evidence is now accumulating to indicate that these vigorous hypothermic methods are not only saving lives but restoring patients to useful positions in our society.

Electrolytes

Estimation of the serum electrolytes should be done frequently in all cases of severe head injury. Potassium levels tend to fall steadily in the presence of extensive cerebral injury. Hemoglobin values should be determined every four days, inasmuch as comatose and semicomatose persons tend to develop progressive anemia.

Activity

Ambulation is encouraged as soon as the condition of the child permits. If signs of fatigue become manifest, appropriate rest periods are instituted.

SKULL FRACTURE

Linear Fracture

Simple linear fractures of the vault require no surgical treatment. Basal fractures with rhinorrhea or otorrhea require prophylactic antibacterial therapy which is continued for at least three days after the cerebrospinal fluid fistula closes. Otorrhea rarely persists beyond the acute phase of the head injury, but rhinorrhea may become chronic and necessitate surgical intervention consisting of a reinforced closure of the dural laceration and repair of the defect in the floor of the skull with bone or one of the acceptable surgical metals or plastics.

Depressed Fracture

Small, shallow, depressed skull fractures may require no surgical treatment and will disappear with the growth of the skull. Larger depressed fractures should be elevated as soon as the condition of the child permits. "Ping-pong" fractures are easily managed by placing a marginal burr hole and pushing the bone outward with a blunt periosteal elevator. Comminuted, depressed fractures are managed by removing all the in-driven fragments.

Formerly, it was considered unwise to carry out a primary repair of the skull defect remaining after debridement of a compound depressed skull fracture. However, since the advent of antibacterial therapy replacement of the larger bone fragments has been carried out with excellent results from both the cosmetic and structural standpoints. If the wound is potentially infected, all of the bone fragments should be removed and the skull defect repaired later, using one of the accepted techniques for cranioplasty.

Brain Wounds

Brain wounds are treated by removing all devitalized tissue with suction. All in-driven bone fragments and foreign bodies are removed. Care is taken not to injure nervous tissue that is either functioning or may regain function. The dura overlying a brain wound is always closed in a water-tight manner. At times, this necessitates the use of a graft of temporalis fascia or periosteum.

Extradural and Acute Subdural Hematoma

Extradural and acute subdural hemorrhages constitute real surgical emergencies. The severe brain compression produced by these lesions may develop so rapidly that the patient dies before surgical measures can be begun. It must be remembered that in infants and young children extradural hemorrhage commonly occurs in the absence of skull fracture. The classical lucid interval may not occur. Furthermore, extradural hemorrhage may occur in the anterior and posterior fossae of the skull due to laceration of meningeal arteries or tearing of the venous sinuses.

Extradural and acute subdural hematomas are characterized by a more or less rapid deterioration of the state of consciousness, followed by pupillary inequality with dilatation of the ipsilateral pupil, slowing of pulse and respiration, increasing pulse pressure, rise of body temperature, progressive hemiparesis and, at times, generalized convulsions.

Acute Cerebral Edema

Generalized cerebral contusion with edema may produce a syndrome which is indistinguishable from that resulting from acute intracranial hemorrhage. Intracranial pressure may rise to critical levels. In such cases, standard trephine exploration in the frontal, temporal, parietal and suboccipital regions will disclose scattered areas of cerebral contusion without clot formation. Extensive bilateral subtemporal decompressions will often prove to be life-saving measures.

Chronic Subdural Hematoma

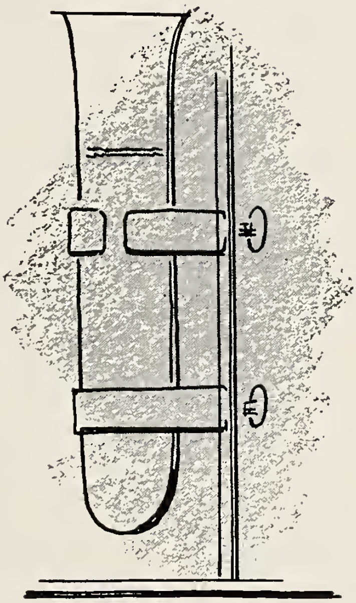
Chronic subdural hematoma is a comparatively late manifestation of head injury in infants and children. Intracranial hemorrhage of this type is due either to tearing of veins that extend from the surface of the brain to the major venous sinuses or to direct laceration of the venous sinuses. Venous injuries of this kind may occur in passage of the head through the birth canal, from maneuvers carried out to aid delivery or from a blow on the head.

In the acute phase the clot that forms is rather firm and bright red. With the passing of time it breaks down to form a more liquid, chocolate-brown mass. In the later phases it consists of clear xanthochromic fluid. Chronic subdural hematomas become surrounded by a membrane of varying thickness. These older hematomas will enlarge steadily due to the osmotic attraction of the clot for cerebrospinal fluid.

The signs and symptoms of chronic subdural hematoma have no characteristic pattern. The lesion should be suspected in infants who have a bulging fontanelle, progressive head enlargement, listlessness, instability, poor appetite, vomiting, convulsions, hemiparesis and hyperactive deep tendon reflexes in varying combination. In older children, separation of the sutures, rather than a bulging fontanelle, may be the first sign.

Because these clots interfere with the growth of the brain, they should be recognized and treated as soon as possible. In the early stages, evacuation of the hematoma is accomplished by repeated needle aspiration of the subdural space through the lateral angle of the fontanelle. In the later stages, trephine exploration and drainage of the subdural space is the procedure of choice. If a well-developed membrane has formed, craniotomy is done and all solid clot and the membrane are excised.

744 Fairmount Avenue, Pasadena (Pudenz).



Trauma or Strain and Heart Disease

Causal Relationship

DONAL R. SPARKMAN, M.D., Seattle

• Myocardial infarction and coronary insufficiency are the common conditions involved in workmen's compensation cases based on allegations of cardiac injury. Since coronary disease tends to be a progressive process, punctuated by sudden accidents, it is difficult to determine when a given stress at work may have had a significant effect in producing an infarction. Though there are gaps in our knowledge, considerable information is available indicating the way in which effort or stress may produce a myocardial infarction.

Certain states have taken steps to develop more uniformity of medical opinion regarding causal relationship of stress to heart disease, and in other ways have attempted to improve the application of workmen's compensation laws in an attempt to provide fair and prompt compensation to those injured by their work but to discourage abuses of these laws.

"CAUSAL RELATIONSHIP of trauma to heart disease may exist under the following circumstances: Sudden death from acute coronary disease (or coronary occlusion with myocardial infarction, or acute coronary insufficiency) in which symptoms develop during the course of or immediately following exertion or strain that is both excessive and unusual for the particular individual concerned; this exertion or strain may be either physical or emotional."

The foregoing is a quotation from a guide for physicians regarding the relationship of trauma or strain to heart disease, developed by a special committee of the Washington State Heart Association. It was formulated in an attempt to clarify some of the problems of the cardiac under Workmen's Compensation laws.

This is a broad field which can be narrowed for purposes of this discussion, since we are dealing with coronary artery disease in most cases. That this is true is indicated by experience such as that of Texon,[14] who noted that 78 of 100 Workmen's Compensation claims based on heart damage were due to coronary artery disease. A review of claims in the ten years 1950-59 under industrial insurance law of the state of Washington showed that in 316 of 401 cases (77 per cent) in which a claim of cardiac damage was made, the problem was acute myocardial infarction or acute coronary insufficiency; and excessive or unusual effort was the alleged cause of the cardiac accident.

Although excessive effort may produce congestive failure if there is preexisting heart disease, this is an uncommon cause of cardiac claims. Industrially-related cerebral vascular accidents, secondary to hypertension, are also relatively uncommon. Although trauma to the chest, either penetrating or nonpenetrating, may injure the heart or cause death, cases of this kind make up a small portion of the total claims based on cardiac damage (less than 1 per cent of the Washington cases) and therefore will not be discussed here.

In light of the foregoing, the comments will be restricted to the effects of effort, stress or strain in precipitating cardiac accidents in persons with preexisting coronary atherosclerosis. Preexisting coronary disease has been specified, since it is generally agreed that even great stress or effort rarely harms the normal heart. It should be noted that the omission of cardiovascular diseases other than effort-related myocardial infarction from this discussion does not imply that in individual cases these other conditions are less important or that claims related to them less difficult to decide.

Almost everyone who has been interested in the Workmen's Compensation problems has been struck by the apparent disparity in the opinions of physicians, compensation administrators and courts as to the relationship of effort at work to heart disease. It is generally agreed that this variation in opinion stems from a lack of agreement among physicians as to when a given effort may have played a significant role in precipitating a heart attack or death. That there should be such disagreement is not strange, for the problem is a complicated one—the possible aggravating effect of a given stress on a progressive, degenerative disease which, in its natural course, is often punctuated by sudden worsening in the form of myocardial infarction or sudden death. What the factors are that precipitate coronary occlusion or sudden death is poorly understood. In most cases such attacks occur without a recognized significant event in the individual's activity or environment and, as a matter of fact, occur not uncommonly during sleep. A decision as to whether there

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is relation between a given effort at work and subsequent heart attack or death is made even more difficult by the observation of pathologists that a coronary occlusion may require hours or days to develop to the point of symptoms. The activities of the worker immediately before the onset of symptoms, therefore, may be unimportant in the process.

It is well to remember that there are two different problems involved—one related to the underlying atherosclerosis, the other to the thrombotic or occlusive complications of this process. With the rare exception of cor pulmonale, secondary to job-related pneumoconiosis, no occupational heart disease is recognized. However, there have been suggestions for some years that certain aspects of some jobs, particularly as they relate to emotional stress, may accelerate the development of atherosclerosis.[2] Proponents of this theory point out that stress may cause an elevation of serum cholesterol, which may accelerate the development of atherosclerosis. In addition, stress may cause an increase in pulse rate, cardiac output and blood pressure. Other as yet undefined ill effects of tension are also suspected. Friedman[2] and Russek[11] described a personality pattern common to young men with coronary disease, and emphasized the importance of occupational and other forms of stress in the development of coronary atherosclerosis. However, others are skeptical of the importance of emotional factors[6,13] and the question remains unanswered. Even assuming it may yet be proved that emotional stress hastens the process of atherosclerosis, it does not seem to deserve weighty consideration in a discussion of job-related heart disease, for these reasons: Atherosclerosis takes years to develop, and emotional tension is only one of many factors apparently affecting its development; there are many sources of stress in a given worker's life, some of which are totally unrelated to his job; it is difficult to quantify degrees of stress; and, as noted by Russek,[11] the individual's emotional reaction to his job is more important than his job classification, an observation supported by Pell and D'Alonzo,[9] who failed to find an increased prevalence of coronary disease in executive and managerial personnel, presumably subject to a greater responsibility and, therefore, stress.

It would appear that stresses and responsibilities that would be intolerable for one person are but a pleasant challenge to another. Although as physicians we consider emotional stress among other factors when advising patients regarding jobs, we are not justified in saying that any group of jobs, because of the emotional stress that may be involved, is harmful to people who have coronary heart disease. In addition, until we know much more of the causation of atherosclerosis, we must be very cautious in compensation cases about concluding that the continuing emotional stresses of a particular job over a period of years accelerated an atherosclerotic process and led to a heart attack or death sooner than it might otherwise have occurred.

In recent years, attention has been directed toward the effect of exercise on the atherosclerotic process. A widely quoted study is that of Morris and co-workers,[7] who compared the development of coronary disease in bus drivers with that in bus conductors, and in postmen with that in persons in sedentary jobs in the Postal Department of Great Britain. They believed their study proved that men in physically active jobs have a lower incidence of coronary heart disease in middle age than have men in physically inactive jobs, and also that the disease was not so severe in physically active workers. Other investigators who have done similar epidemiological studies have expressed the belief that additional factors, such as diet and emotions,[3,4] were more important determinants of atherosclerosis than exercise. However, as far as the topic of the moment is concerned, there is no evidence that moderate or even strenuous exercise over many years has a harmful effect on the course of atherosclerosis. Actually, the reverse seems to be true. It must be added that exercise of any degree may produce angina if the coronary artery is too narrowed to compensate for it.

The chief problem for discussion here is the relationship of physical or emotional stress to acute myocardial infarction. Information on this is available in two areas: (1) The physiological effects of stress upon atherosclerotic coronary arteries, and (2) epidemiological studies correlating attacks of myocardial infarction with antecedent physical activities and emotional stresses.

There are great deficiencies in knowledge of both areas. Admitting these deficiencies, let us consider the mechanisms of coronary occlusion and myocardial infarction in order to determine whether they may be influenced by effort or stress. Coronary occlusion in the majority of instances occurs in one of three ways, by progressive intimal thickening, as a phenomenon secondary to intimal hemorrhage and by intraluminal thrombosis. It is agreed that all these processes occur as a part of the disease process and usually with little relation to the patient's environment. The question is whether any of them may be produced or significantly influenced by environmental conditions.

Since reference has already been made to the lack of convincing evidence that atherosclerosis is a job-related disease, the matter of intimal thickening needs no further discussion.

Paterson[10] has been the leading exponent of the proposition that frequency and degree of intimal hemorrhage are important factors in coronary occlusion. He said it can be demonstrated that most intimal capillaries arise directly from the lumen of coronary arteries and not from vasa vasorum in the adventitia. This being true, he said, increases in systemic pressure are transmitted directly to such capillaries; therefore, increase in blood pressure secondary to physical exertion or emotional stress may rupture such capillaries, leading to significant thickening of the intima and in some cases to actual occlusion of the coronary artery. Even if occlusion does not occur, Paterson said, a thrombus may form on the overlying and altered endothelium. He noted such intimal hemorrhage at autopsy in 87 per cent of 58 cases of death from coronary occlusions and, on the basis of the foregoing reasoning, he expressed belief that coronary occlusion is often the result of physical exertion or emotional stress. Other investigators have not found so high an incidence of intimal hemorrhage and have expressed doubt it is as common a cause of coronary occlusion as Paterson believes. Yater and associates,[20] for example, found evidence of recent intimal hemorrhage in the coronary artery in only 6 per cent of 450 soldiers who died of acute coronary artery disease. Some other pathologists believe that intimal capillaries arise from vasa vasorum and are, therefore, not as susceptible to changes in systemic pressure as Paterson[10] suggested. Further, it is agreed that intimal hemorrhage often occurs as a part of the disease process without regard to stress or strain.

Although coronary thrombosis has occurred clinically in association with physical or emotional stress often enough to suggest a causal relationship, it has been difficult to explain the possible connection. At least three mechanisms have been proposed in addition to changes which may occur secondary to an intimal hemorrhage. One of the oldest such suggestions is rupture of an atheroma into the lumen of the coronary artery, leaving a rough spot on the intima on which a thrombus forms. The way in which effort causes the rupture has not been adequately explained although the factors described by Texon,[15] and referred to below, may be relevant. Evidence against this hypothesis is the lack of pathological proof that it occurs. Several observers have demonstrated an increased coagulability of the blood during acute emotional stress and have offered this as one of the causes of coronary thrombosis at such times.[2] Lastly, Texon[15] recently described the hemodynamic factors which not only influence the localization of atherosclerotic lesions but may even initiate the occlusive event. He referred to Bernoulli's theorem that fluid in motion possesses energy by virtue of its velocity and pressure. The static pressure plus the velocity pressure are constant as fluid flows in a tube of uniform size. However, according to Texon's concept, if there is narrowing at one point, the velocity increases and the static pressure falls correspondingly. The fall in static pressure at such a point produces a negative pressure or "suction" effect which stimulates intimal thickening and atherosclerotic plaque formation in this area. When degenerative changes in the plaque have progressed to a critical degree, an increase in velocity may increase the suction effect enough to detach the intimal layer and lead to thrombosis at this point. Such an increased velocity might occur with physical effort or emotional stress. Thus, we have four mechanisms which, theoretically, could lead to coronary thrombosis and occlusion. It should be kept in mind that even if stress initiated thrombus formation, it might take hours or days for narrowing to progress enough to cause symptoms.

The relation of coronary insufficiency to stress is easier to visualize. This is an extension of the process which produces angina pectoris but in which more prolonged disproportion between blood flow through the coronary arteries and blood needs of the myocardium leads to permanent, usually focal, myocardial necrosis. It occurs in the presence of preexisting coronary atherosclerosis which may have been unrecognized. It may, of course, be produced by anything that increases cardiac work, including physical effort or emotional stress, in addition to a number of conditions leading to decreased coronary flow, such as shock, hemorrhage and arrhythmia. It is generally agreed that this is a mechanism by which severe and prolonged effort or stress may lead to myocardial infarction even in the absence of coronary occlusion.

There are many statistical studies on the relationship of effort to myocardial infarction, among which the most widely quoted are those of Master,[5] purporting to show no relationship between effort and coronary occlusion, and those of French and Dock[1] and Yater and coworkers[20] suggesting there is relationship between unusual physical effort and myocardial infarction. Suffice it to say this is a subject which lends itself to bias and strong opinion, depending on the author's background and approach. The facts are few, the opinions many, divergent and often not entirely objective.

The American Heart Association, through its rehabilitation program, has been much interested in this problem, since fear of increased costs under industrial insurance acts has been one of the deterrents to employment of persons with heart disease. There are two committees of the American Heart Association working on the problem, the Trauma and Strain Committee and the Medical, Legal and Insurance Committee.

The Trauma and Strain Committee has three projects under way:

1. The careful pathological examination of sudden deaths of heart disease in New York City correlated with the circumstances before death.[18]

2. A clinical study of the relation of events at work to heart attacks in a large New York industry.

3. A comprehensive investigation of legal procedures involved in decisions in compensation claims based on heart damage all over the United States.

Completion of the first two studies will shed more light on the possible relation of stress and strain to heart attack but cannot be expected to solve the problem.

Although the ultimate truths in this matter will probably elude us for some years, today's compensation cases based on allegation of heart damage cannot be postponed, and since the present methods of arriving at a decision in such cases are often unsatisfactory and unjust, some states have attempted to develop more logical and equitable procedures for handling compensation claims of this kind. Such attempts may be classified under four headings:

1. Development of medical criteria for the relationship of strain to heart disease;

2. Setting up of expert and unbiased panels to make such decisions;

3. Amendments to existing laws;

4. Improvement of application of existing laws.

Under Point 4 should be mentioned the improvement of rehabilitative efforts for cardiac claimants under Workmen's Compensation. There may well be other approaches.

In 1952, under the stimulus of the chairman of the Industrial Commission of the State of Utah, a group of internists in the Salt Lake area formulated criteria for the relation of strain to heart disease[16] which were accepted by their colleagues. In addition, they set up a system whereby each claim based on allegation of cardiac injury was examined by two or more experts from a panel chosen by the industrial commissioner from a list of specialists in that field that was submitted by the Utah State Medical Association.

After careful examination of the claimant by the panel, an opinion was submitted as to causal relation, this opinion being available before litigation occurred. According to Dr. L. E. Viko, one of the men chiefly responsible for the Utah plan and chairman of the cardiac panel, "Medical findings and Commission decisions are now reasonably consistent," and "knowledge of this has led to a marked decrease of the number of unreasonable claims." According to Industrial Commissioner O. A. Wiesley[19] of Utah, "Fear, suspicion, bias and hatred have been eliminated because expert, honest, medical opinion is available to both parties at no cost." Formal hearings by the Utah Industrial Commission have been decreased from an average of 300 a year to 40.

Similar criteria for the relation of strain to heart disease were formulated in the State of Washington in 1955 and a guide for physicians was published.[17] These criteria, a part of which has been quoted, have been approved by the three societies of internal medicine in the State of Washington and have been discussed in most of the county medical societies. The criteria are commonly referred to in heart disease compensation cases in Washington. The Department of Labor and Industries sends a copy of them with the file on each case related to heart disease to serve the examining physician as a guide in making his decision.

A panel of interested and qualified internists has been set up through the Washington State Heart Association and the Washington Society of Internal Medicine. Two or more of these panelists in different localities are selected by the Department to examine the living claimant or the file of the deceased. The panel decision has no legal status in Washington but, from our observations, appears to be usually accepted by the Department as the basis for its decision. It should be emphasized that the Heart Association became involved in the medico-legal problem through its rehabilitation program: that it is not for or against claimant or employer but is interested in a prompt and fair settlement of cardiac claims.

Three years ago, Oklahoma cardiologists drew up similar criteria[8] and distributed them to physicians in the state. Many states, of course, have procedures for using expert and impartial panels for review of accident claims in all fields of medicine.

Early in the Heart Association's investigation of the workmen's compensation situation in Washington, it was noted that some competent physicians were offering opinions as to causal relation that did not accord with accepted medical thought. When confronted with such opinions, their explanations often were based on their interpretation of the law (usually wrong) or their recognition of the financial needs of the claimant or survivors. Legal consultants have made it clear that as physicians we should make our judgments on purely medical grounds and should not warp our conclusions to thwart the law or to meet an economic need. This is a good rule to remember: We should practice medicine and let the courts interpret the law. If the laws are inadequate or unjust, we should by other means attempt to influence a change through our legislators.

It would, of course, be desirable to know whether this combination of medical criteria and panel examinations does improve the application of the Workmen's Compensation Law in cardiac cases. If it is successful, it should lead to more uniform medical opinion regarding the effect of stress on the heart, to a reduction in the proportion of such cases proceeding to litigation, to prompter settlement of claims, to aggressive rehabilitation efforts and, lastly and most important, to better employment opportunities for persons with heart disease. Since there are many influences besides those of physicians that bear on the way workmen's compensation laws are administered, it is difficult to assess the relative importance of each. However, the Heart Association's committee has been encouraged by acceptance given to its efforts by physicians, administrators of the law, employers, labor unions and others. A study is under way in Washington reviewing cardiac claims since 1950 which will better evaluate the problem. One preliminary and interesting bit of evidence from this study is as follows: "There has been an almost steady decrease in the total number of accepted cardiac compensation cases, from 124 in 1950 to 68 in 1957."[12] This decrease stands in contrast to an increase in such cases reported in New York State and to frequent statements that such cases are increasing throughout the country. We who are working on the study were surprised to find this diminishing number of cases and, as yet, are unable to explain it satisfactorily.

515 Minor, Seattle, Washington.

REFERENCES

1. French, A. J., and Dock, W.: Fatal coronary arteriosclerosis in young soldiers, J.A.M.A., 124:1233-1237, April 29, 1944.

2. Friedman, M., Rosenman, R. H., and Carroll V.: Changes in the serum cholesterol and blood clotting time in men subjected to cyclic variation of occupational stress, Circulation, 17:852-861, May 1958.

3. Friedman, M., and Rosenman, R. H.: Association of specific overt behavior pattern with blood and cardiovascular findings; blood cholesterol level, blood clotting time, incidence of arcus senilis and clinical coronary artery disease, J.A.M.A., 169:1286-1296, March 21, 1959.

4. Keys, A., et al.: Studies on diet, body fatness and serum cholesterol in Madrid, Spain, Metabolism, 3:195-212, May 1954.

5. Master, A. M., and Jaffe, H. L.: Factors in onset of coronary occlusion and coronary insufficiency; effort, occupation, trauma and emotion, J.A.M.A., 148:794-798, March 8, 1952.

6. Miles, H. H. W., Waldfogel, S., Barrabee, E. L., and Cobb, S.: Psychosomatic study of 46 young men with coronary artery disease, Psychosomatic Medicine, 16:455-477, Nov.-Dec. 1954.

7. Morris, J. N., Heady, J. A., Raffle, P. A., Roberts, C. G., and Parks, J. W.: Coronary heart disease and physical activity of work, Lancet, 2:1053-1057, Nov. 21, 1953.

8. Oklahoma State Heart Association: Criteria for Relationship of Trauma or Strain to Heart Disease, Oklahoma State Heart Assoc., 825 N. E. 13th, Oklahoma City, 1957.

9. Pell, S., and D'Alonzo, C. A.: Myocardial infarction in a one-year industrial study, J.A.M.A., 166:332-337, Jan. 25, 1958.

10. Paterson, J. C.: Some factors in causation of intimal hemorrhages and in precipitation of coronary thrombi, Canad. M.A.J., 44:114-120, Feb. 1941.

11. Russek, H. I.: Role of heredity, diet, and emotional stress in coronary heart disease, J.A.M.A., 171:503-508, Oct. 3, 1959.

12. Sparkman, D. and Bergy, G.: Industrial compensation aspects of heart disease, Industrial Med. & Surg., 28:60-66, Feb. 1959.

13. Sprague, H. B.: Emotional stress and the etiology of coronary artery disease, Circulation, 17:1-4, Jan. 1958.

14. Texon, M.: Heart Disease & Industry, Grune & Stratton, 1954.

15. Texon, M.: A hemodynamic concept of atherosclerosis, with particular reference to coronary occlusion, Arch. Int. Med., 99:418-427, March 1957.

16. Viko, L. E.: From Work and the Heart, Rosenbaum, F. F., and Belknap, E. L., Hoeber-Harper, N. Y., 1959, p. 487.

17. Washington State Heart Association: Guide for Establishing Criteria for Relationship of Trauma or Strain to Heart Disease, Washington State Heart Assoc., Seattle, 1956.

18. Weinberg, S. B., and Helpern, G.: From Work and the Heart, Rosenbaum, F. F., Belknap, E. L., Hoeber-Harper, N. Y., 1959, p. 288.

19. Wiesley, O. A.: From Work and the Heart, Rosenbaum, F. F., Belknap, E. L., Hoeber-Harper, N. Y., 1959, p. 482.

20. Yater, W. M., et al: Coronary artery disease in men 18 to 39 years of age; report of 866 cases, 450 with necropsy examinations, Am. Heart Jr., 36:334-372, Sept. 1948.

Chloride Content of the Cerebrospinal Fluid

H. W. GIERSON, *M.D.*, and G. J. OWENS, *M.D.*, Los Angeles

• In a study of the spinal fluid chloride levels at the time of admission to hospital in a series of 1,788 cases of suspected meningitis, it was noted that the chloride content was not depressed in poliomyelitis, viral meningitis and encephalitis. In pyogenic meningitides, the spinal fluid chlorides were moderately depressed. More pronounced depression was noted in tuberculous and fungal meningitides.

IN THEIR BASIC TEXT on the cerebrospinal fluid, Merritt and Fremont-Smith[3] frequently referred to the work of Mestrezat,[4] pointing out that he was the first to emphasize the diagnostic value of the spinal fluid chloride content. But whereas Mestrezat implied that the reduction in chloride content of the cerebrospinal fluid in pyogenic and tuberculous meningitis was part of the disease process, Merritt regarded the fall in chloride as a reflection of the decline in serum chloride. Mestrezat said that very low values were pathognomonic of tuberculous meningitis, but Merritt and Fremont-Smith noted that their results showed this not to be true, as their lowest values were in cases of acute purulent meningitis.

Parker[5] in his Textbook of Clinical Pathology (1948) said: "In acute meningitis, the chloride content is decreased usually below 600 mg. In tuberculous meningitis, the sodium chloride concentration is usually less than 650 mg. and often less than 550 mg. per 100 cc." And the following statement appears in Kolmer's Approved Laboratory Technic, 1951,[2] "Chloride values below 600 mg. are infrequent except in tuberculous meningitis, while values between 630 and 680 mg. per 100 cc. are commonly found in acute purulent meningitis." Still another viewpoint is implied in "A Syllabus of Laboratory Examinations in Clinical Diagnosis,"[1] the chloride content being omitted altogether from a table entitled "Cerebrospinal fluid in differential diagnosis."

Our clinical impressions resulting from the observation of more than 400 patients with tuberculous meningitis, plus lesser numbers with other meningitides, tended to support the statements of Mestrezat rather than those of his successors. This, plus the fact that our search of the literature failed to reveal any recent extensive clinical reports on the subject, prompted this study.

The 1,788 cases comprising this study were obtained from hospital laboratory records and were selected only if a spinal fluid chloride determination was made at the time of admission. The clinical records of the patients were then obtained, the diagnosis ascertained and the cases grouped by diagnosis as follows:

1. No central nervous system disease
2. Poliomyelitis
3. Meningitis, pyogenic
4. Meningitis, tuberculous
5. Meningitis, viral
6. Encephalitis
7. Organic central nervous system disease (tumors, cerebrovascular accidents, etc.)
8. Meningitis, fungal.

The cases in each of the foregoing categories were then divided according to the chloride content, per liter of spinal fluid:

A. 121 mEq. per L or higher
B. 117 through 120 mEq.
C. 113 through 116 mEq.
D. 108 through 112 mEq.
E. 100 through 107 mEq.
F. Below 100 mEq.

RESULTS

When the 1,788 cases were grouped according to diagnosis, the following distribution was obtained:

No central nervous system disease	507
Poliomyelitis	273
Meningitis, pyogenic	375
Meningitis, tuberculous	327
Meningitis, viral	125
Encephalitis	89
Organic central nervous system disease	78
Meningitis, fungal	14

The distribution by chloride levels for each of the above categories is shown in Table 1.

It will be noted in the table that the patterns of chloride content for poliomyelitis, viral meningitis and encephalitis are essentially similar to the one obtained in the group of cases in which no central nervous system disease was found. For the pyogenic meningitis group, a tendency toward lower levels is apparent. This tendency is even more pronounced in the tuberculous meningitis group.

From the Los Angeles County General Hospital, Los Angeles 33.

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TABLE 1.—*Chloride Content of Spinal Fluid of Patients with Various Central Nervous System Diseases*

	Chloride Levels in mEq. per Liter					
	121 or higher	117 through 120	113 through 116	108 through 112	100 through 107	Below 100
No central nervous system disease	328	135	34	6	4	0
Poliomyelitis	202	58	10	2	1	0
Meningitis, pyogenic	129	112	64	43	20	7
Meningitis, tuberculous	48	38	49	58	78	56
Meningitis, viral	75	31	12	4	3	0
Encephalitis	57	24	6	1	0	1
Organic central nervous system disease	50	14	9	1	4	0
Meningitis, fungal	0	4	4	2	3	1

DISCUSSION

The significance of any single laboratory test result being subject to doubt, it is established policy at the Los Angeles County General Hospital to obtain serial spinal fluid specimens and to observe any tendency for the chloride level to rise or fall. But the severity of the illness in the various meningitides often denies the opportunity for such observation before the beginning of therapy, and some appraisal or interpretation of the initial findings must be made. It is precisely for this reason that only initial spinal fluid examinations were included in the study.

From the results obtained, it appears that the spinal fluid chlorides are unaltered in poliomyelitis, encephalitis and the viral meningitides. A moderate decrease in chloride content was associated with pyogenic meningitides, and a more decided decrease with tuberculous meningitis: In 70 of 375 cases of pyogenic meningitis (19 per cent), spinal fluid chloride content at admission was below 113 mEq. per liter, whereas it was below that level in 192 of 327 cases (60 per cent) of tuberculous meningitis. Furthermore, in only 7 per cent of the pyogenic meningitis cases was it below 108 mEq., against 41 per cent in the tuberculous meningitis group. In fungal meningitides, the spinal fluid chloride levels are quite similar to those in tuberculous meningitis.

Our experience indicated that the amount of chloride level in the spinal fluid is influenced by the amount in the circulating blood, but that the reduction noted in meningitis occurs primarily as a direct result of the disease process itself. It is, however, desirable to determine the amount in the spinal fluid and the amount in the blood simultaneously if a precise evaluation of the spinal fluid chloride level is to be made. The need for such simultaneous determinations is of special significance during the acute phase of the illness when electrolyte disturbances are more common.

Los Angeles County General Hospital, 1200 North State Street, Los Angeles 33 (Gierson).

REFERENCES

1. Ham, T. H.: Editor, Cambridge, Harvard University Press, A Syllabus of Laboratory Examinations in Clinical Diagnosis, 1950.

2. Kolmer, J. A., Spaulding, E. H., and Robinson, H. W.: Approved Laboratory Technic, Appleton, 1953.

3. Merritt, H. H., and Fremont-Smith, F.: The Cerebrospinal Fluid, W. B. Saunders, 1937.

4. Mestrezat, W.: Le liquide cephalorachidien normal et pathologique, Paris, A. Maloine, 1912.

5. Parker, F. P.: A Textbook of Clinical Pathology, Williams & Wilkins, 1948.

Cardiac Injury in Bodily Trauma

A Clinical Study

IRVING I. LASKY, *M.D.*, and JOHN H. DAVIS, *M.D.*, Beverly Hills

• Involvement of the heart in bodily trauma occurs in a variable incidence. It is most frequently observed secondary to chest injuries. Because generalized bodily trauma can produce cardiac damage, the examination of the cardiovascular system is indicated and justified in cases of bodily injury.

THE DEVELOPMENT of increasingly critical methods of clinical evaluation has facilitated the appraisal of the condition of the heart in cases of cardiac damage done by external impact. We now have serum glutamic-oxalacetic transaminase determination to augment the information supplied by history-taking, physical examination and the electrocardiogram.

Glutamic-oxalacetic transaminase is widely distributed in animal tissues, with the greatest concentration in heart muscle, skeletal muscle, brain, liver and kidney, in that order.[1] Injury to these organs increases circulating transaminase.

ANATOMICAL CONSIDERATIONS

The anatomic location of the heart makes it susceptible to injury as the result of accelerating, decelerating or crushing forces.

The heart lies in the middle mediastinum. Laterally, it is well protected by adjacent pulmonary structures. Anteriorly and posteriorly, however, the contiguity of this organ to the sternum and thoracic vertebrae exposes it to relatively immobile points of contact. Superiorly, very stout ligaments secure the base. The apex, on the other hand, is movable, the pericardial sac limiting the extent of motion.

Although anatomical protection is afforded, the relationship of the heart to boney structures of the thorax makes it vulnerable to injury of certain types, much as the brain can be injured by trauma to the skull.

PATHOGENESIS

Cardiac injury in bodily trauma may occur in any of five ways.[3]

1. A direct blow to the heart, such as might occur with fracture of the sternum or ribs.
2. Contusion or compression of the heart between the sternum and the vertebral bodies.
3. Application of indirect forces, as by compression of the legs and abdomen, producing increase of intraventricular pressure and subsequent myocardial damage.
4. Laceration of the abdominal or thoracic viscera, producing sudden increase in intraventricular pressure and subsequent myocardial damage.
5. "Concussion of the heart" (vagotonia) as manifested by arrhythmias.

Generalized blunt force, severe enough to crush or compress the chest and produce cardiac and other intrathoracic injury, is most often associated with vehicle accidents and falls from a height.

PATHOLOGY

A crushing downward force applied anteriorly may dislodge the heart from its superior and posterior attachments and tear the pericardial sac. Injuries of this magnitude are most frequently associated with severe chest and bodily involvement and are usually fatal. Less violence may cause incomplete internal transverse lacerations of one or both auricles above the auriculoventricular valve rings, and lacerations of attachments of the venae cavae and pulmonic veins may occur. Mural thrombi may develop over the site of injury in the auricle if the injured person survives. Crushing of the chest may produce punctures and lacerations of the pericardium and heart from sharp ends of broken ribs or the sternum. Sudden violent compression of the chest may cause one or more ruptures of the heart involving the ventricles, auricles or septa. In such cases death ensues rapidly from intrapericardial hemorrhage.

A severe localized blunt force, like that from the impact of a small, hard, fast-moving object striking the anterior chest wall, may contuse and rupture the thin anterior wall of the right ventricle. The great majority of isolated contusions of the heart occurring in the anterior wall of the right ventricle are caused by localized impact of that kind.[4]

At autopsy of 31 patients who died within three weeks of slight to moderate chest trauma but with severe extracardiac injury, 21 were found to have

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Submitted August 3, 1960.

From the School of Medicine, University of California, Los Angeles 24.

TABLE 1.—*Follow-Up Studies of Patients with Cardiac Damage Incurred in Bodily Trauma*

Case	Age (Years)	Date	Cause	Evidence of Cardiac Injury	Transaminase Peak (SGO Units)	Reexamination
1.	24	7-11-55	Fell from motorcycle. Unconscious. Multiple abrasions of face and laceration of forehead.	T waves inverted Leads III, aVF. Flattened V_5, V_6.	78 (19 hrs.)	6-25-57–No cardiovascular findings. Transaminase normal. EKG normal except for infrequent ventricular premature contractions.
2.	31	7-17-55	Auto vs. auto. Driving. Thrown from car. Fracture 12th left rib.	Flattened T waves Leads III, aVF, V_5, V_6. Spiked T in V_2. Improved in 5 days.	232 (6 hrs.)	8-1-57–No cardiovascular findings. EKG and transaminase normal.
3.	30	7-21-55	Fell from second story roof. Unconscious. Fracture of pelvis, hands, L-5 vertebra. Lacerated bladder.	Transient T wave and ST segment changes in posterolateral leads.	211 (37½ hrs.)	9-17-57–No cardiovascular findings. EKG and transaminase normal.
4.	59	8- 9-55	Auto vs. auto. Driving. Fracture left 5th-8th ribs. Patient in shock.	Left ventricular hypertrophy with strain pattern. Possible cardiac dilatation. Changes persisted after recovery from shock.	78 (108 hrs.)	7-5-57 – No cardiovascular complaints. B.P. 170/110. EKG and transaminase normal.
5.	23	4-23-56	Motorcycle accident. Fracture — dislocation left ankle. Fracture left clavicle.	Subjective dyspnea, mild. Transient systolic murmur. Inverted T waves in Leads III, aVF. Occasional premature ventricular beats.	109 (2 hrs.)	9-11-57–No cardiovascular complaints. EKG and transaminase normal.

subpericardial hemorrhage, and small pericardial or epicardial tears were observed in ten. Subpericardial fibrosis was frequent among a similar group of patients who lived six to 18 months after the accident.[5]

CLINICAL EVALUATION

The most important symptoms, physical signs and electrocardiographic changes that occur in cardiac injuries are as follows:

Symptoms: Precordial pain; dyspnea and orthopnea; cyanosis; evidence of shock (gray pallor, weakness, sweating and restlessness).

Physical Signs: Cardiac arrhythmia; fluctuations in blood pressure; increase in the area of cardiac dullness (suggesting pericardial effusion or cardiac dilatation); paradoxical pulse; abnormal heart sounds; pericardial friction rub; cardiac murmurs if they appear suddenly or change abruptly; signs of cardiac failure, such as pulmonary edema or right heart failure.

Electrocardiographic Abnormalities: Extrasystoles; auricular fibrillation; auricular flutter and other disorders of rhythm; abnormal P waves; change in the QRS complex; abnormalities in the ST segment and T wave.

For a diagnosis of cardiac injury, Lowry recommended there be definite electrocardiographic evidence of myocardial damage within 48 hours after injury. The electrocardiographic changes in Lowry's series included variability in the ST segment, T wave changes, first degree heart block, transient bigeminal rhythm and ventricular extrasystoles.[7]

Lieberman and coworkers reported a series of 51 persons of all ages involved in various accidents,[6] nine of whom had evidence of cardiac injury. The evidence consisting of elevated serum transaminase and electrocardiographic abnormalities in all cases. The electrocardiographic changes involved combinations of T wave flattening and inversion, ST segment shifts, transient spiking of the T waves over the precordium and premature auricular and ventricular beats. Four of the nine patients had been injured while driving an automobile and three while riding a motorcycle, one in falling from a moving car and one in a fall from a second story roof. All patients had multiple contusions and eight had fractures. Five of the nine patients were carefully reexamined after varying periods from the time of the injury and the observations are shown in Table 1.

The following report illustrates many of the features of cardiac injury from external impact.

REPORT OF A CASE

A registered nurse, aged 52, was involved in a collision of automobiles September 28. 1959 at 7:45 a.m. She was thrown forward and struck her chest and face against the steering wheel. She was momentarily unconscious. She complained continually of pain in the chest and in the right cheek. The patient

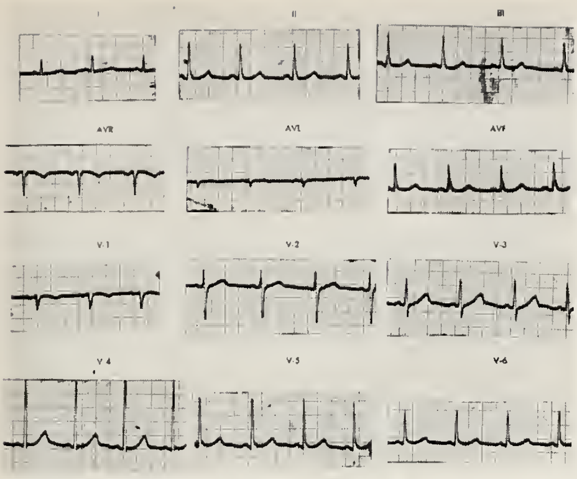

Figure 1.—Electrocardiogram taken five and a half hours after injury.

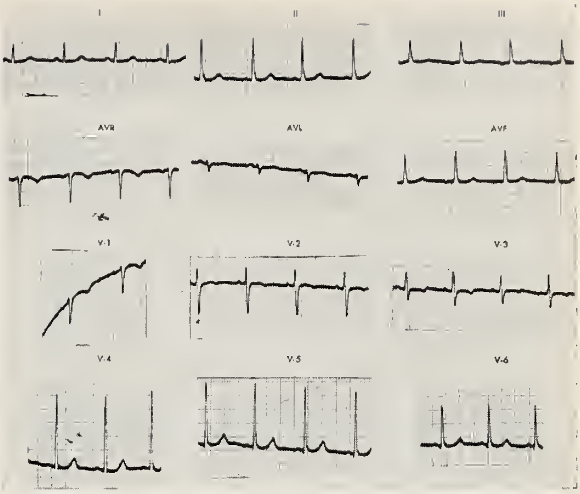

Figure 2.—Electrocardiogram taken 24 hours after injury.

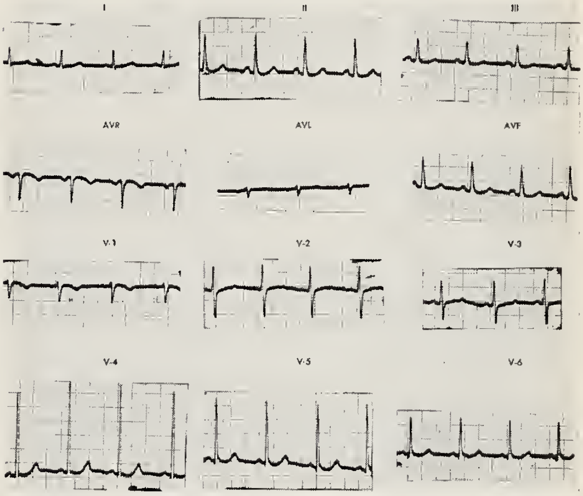

Figure 3.—Electrocardiogram taken 48 hours after injury.

was examined at 12:20 p.m. The blood pressure was 120/80 mm. of mercury and the pulse was regular at a rate of 78. The only abnormality noted on physical examination was a depression over the right malar bone and some ecchymosis at the site. However, the patient complained of persistent pain over the chest. not entirely relieved by narcotics. At 1:30 p.m. an electrocardiogram was ordered because of suspicion of injury to the myocardium (see Figure 1) but the tracing was completely within normal limits. The pain became progressively worse. Serum transaminase was 370 SGO-T units. The blood sedimentation rate was 28 mm. in one hour. Leukocytes numbered 12,500 per cu. mm., with 93 per cent polymorphonuclear cells. An electrocardiogram on the morning of September 29 showed notching and widening of the P waves in Leads II, III and aVL. flattening of the T in Leads III and diphasic T waves in V_2 and V_3 (see Figure 2). Serum transaminase on this date was 230 SGO-T units. On September 30 an electrocardiogram showed slight depression of the ST segments in Leads III and aVF, a flat T wave in aVL and a tendency of the T waves to become upright in V_2 and V_3 (see Figure 3). On this date the patient complained of severe pain in the chest, and a to-and-fro friction rub was heard below the sternal xyphoid junction. An x-ray film of the chest was within normal limits. On October 1 the pain was still present but the friction rub had disappeared and by the following day the pain was considerably diminished. Microscopic hematuria developed and a urologist attributed it to renal contusion. An electrocardiogram on October 2 showed diphasic T waves in V_2 and V_3 and depression of the ST segments from V_2 to V_5. On October 3 the serum transaminase was 47 SGO-T units. By October 6 the chest pains had practically disappeared. On October 7 the electrocardiogram had practically returned to normal except for minimal depression of the ST segments in V_2, V_3 and V_4. On October 8 the serum transaminase was 12 SGO-T units. The next day the electrocardiogram again showed T wave inversion in V_2 and a lowering of the T wave in V_3 and slight ST depression in V_3. On October 13 the T wave was less deeply inverted in V_2. On October 19 the electrocardiogram was entirely normal except that the T wave remained inverted in V_2 (See Figure 4).

On October 29 the chest pains had entirely disappeared and vital signs were within normal limits. The malar fracture was repaired and, at a later date. a hysterectomy for a fibromyomata was performed, all without incident. On October 30 a vectocardiogram was reported as abnormal, showing a superior and slightly anterior ST displacement without evidence of loss of ventricular potential. On March 24. 1960 the electrocardiogram was within normal limits

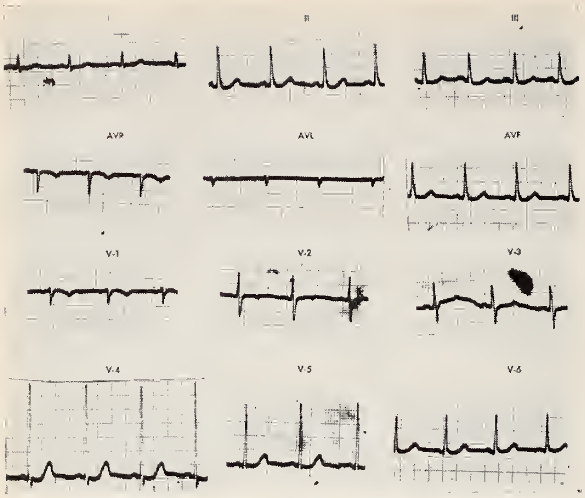

Figure 4.—Electrocardiogram taken 20 days after injury.

except for an inverted T in aVL and V_2, changes that had not been present on the original electrocardiogram.

DISCUSSION

Barber[2] reported the first clinical attempt to determine the incidence of cardiac trauma in bodily injuries. He made electrocardiographic studies in 33 cases of chest injuries and noted abnormalities in eight of them (24.2 per cent). Sigler studied the incidence of trauma to the heart in 42 cases of rather serious accidental injuries to the body.[8] In 32 (76.2 per cent) of these cases there was clinical and/or electrocardiographic evidence of some cardiac damage. One patient died of the cardiac injury and one showed permanent damage, but the remainder had complete recovery so far as the heart was concerned. Of 75 patients studied by Lowry, 20 (26 per cent) showed some slight but definite cardiac abnormalities within 48 hours after the accident.[7]

Although in general there is cardiac damage in approximately one-third of cases of bodily trauma, the incidence varies widely, depending on the kind of case studied and the location and extent of trauma.

As demonstrated in the extensive work of Lieberman and co-workers,[6] the serum glutamic-oxalacetic transaminase levels may be elevated in cases of generalized bodily trauma without cardiac involvement.[6] This is, of course, confirmatory of the presence of this enzyme in other major organs of the body and, in particular, in skeletal muscles.[1]

The literature contains few examples in which there is evidence of continued cardiac disorder following recovery from injury. Death or complete recovery is the ordinary expectation.

450 North Bedford Drive (Lasky).

REFERENCES

1. Awapura, J., and Seale, B.: Distribution of transaminase in rat organs, J. Biol. Chem., 194:497-502, 1952.

2. Barber, H:. Electrocardiographic changes due to trauma, Brit. Heart J., 4:83, 1942.

3. Bright and Beck: Non-penetrating wounds of the heart, Am. Heart J., 10:239, 1935.

4. Helpern, M.: Blunt force injuries of the heart, Am. J. Path., 25:783, July-Nov. 1949.

5. Kissane, R. W.: Traumatic heart: non-penetrating injuries, Circulation, 6:421-425, 1952.

6. Lieberman, J., Lasky, I. I., Dulkin, S. I., and Lobstein, O. E.: Serum glutamic oxalacetic transaminase activity in conditions associated with myocardial infarction—1. Bodily trauma, Ann. Int. Med., 46:485-505, March 1957.

7. Lowry, T.: The question of cardiac trauma, Minnesota Academy of Medicine, 34:1016-1020, Oct. 1951.

8. Sigler, L. H.: Traumatic injury of the heart, Am. Heart J., 30:459, July-Dec. 1945.

Iatrogenic Perforation of the Esophagus

JOHN H. HEALD, *M.D.*, San Francisco

• In three of ten cases of instrumental esophageal perforation occurring at the San Francisco Hospital in the period 1947-1959, the patient died, having received supportive therapy only. Eight of the ten perforations in this series resulted from the use of the esophagoscope.

Roentgen studies of the neck and chest, including studies with an opaque medium in the esophagus, are invaluable aids in establishing the diagnosis.

Close observation of all patients for twenty-four hours after instrumental procedures involving the esophagus is advisable.

THE LITERATURE contains many detailed reports on esophageal perforation, mainly describing the clinical and therapeutic aspects of spontaneous rupture. The purpose of this report is to emphasize the hazards of instrumental procedures involving the esophagus.

During the period 1947-1957, there were ten instances of instrumental esophageal perforation at the San Francisco Hospital. Review of the records since that time revealed no additional accidental ruptures through October 1959. The procedures preceding perforation, the diagnostic measures available to confirm the diagnosis and the therapeutic outcome will be briefly discussed. The age range of patients was from 18 months to 75 years. Of the ten instrumental perforations, eight resulted from use of an esophagoscope. Most of the perforations occurred at site of previous esophageal disease. In three cases the site was the cervical esophagus at the level of the cricopharyngeus muscle.

DIAGNOSIS

The clinical diagnosis is based on some or all of the following symptoms: Pain, substernal, frequently radiating to the back, cervical or upper abdominal; dyspnea, dysphagia and vomiting. Many observers have noted that morphine does not relieve the pain. Physical findings include shock, occasional cyanosis, elevated temperature, swelling of the soft tissues in the lower neck, effusion or consolidation and rigidity of the upper abdomen. Subcutaneous emphysema or the presence of a "mediastinal crunch" reportedly occurs in approximately fifty per cent of the cases. The symptoms vary depending on the site of perforation but, in general, rupture of the thoracic esophagus is more dramatic and fulminating in onset than is rupture in the cervical esophagus. Perforation in the lower third is not infrequently accompanied with upper abdominal pain and rigidity.

Instrumental esophageal perforations are ordinarily not recognized at the time of rupture, but in each of the ten cases at this hospital, the patient complained of rather severe cervical or thoracic pain soon after the procedure, the body temperature rose promptly and dyspnea developed. The most important point in establishing the diagnosis is that the clinician in charge of the patient after an instrumental procedure be aware of the possibility of perforation.

According to Gay,[2] left hydropneumothorax is present in 50 per cent of cases of spontaneous perforation of the esophagus, bilateral in 25 per cent, and on the right in about 7 per cent. Cervical or mediastinal emphysema is present in over 50 per cent. Some observers have made a point of the absence of free peritoneal or retroperitoneal air in such cases; and while this was true in the present series also, there has been at least one case of spontaneous rupture of the esophagus at this hospital with demonstrable retroperitoneal air. In addition to the roentgen observations on plain films, opaque studies of the esophagus using media described below should be done for localization of the site of perforation. Even if the site of perforation cannot be shown by such studies, this fact does not rule out the possibility of rupture, and they are and should always be carried out promptly if the condition of the patient permits. Most clinicians oppose the use of barium and advocate opaque oil such as Lipiodol® or similar iodine preparations. However, it has not been the experience at this hospital that barium *per se* in the mediastinum, in the pleural or peritoneal cavity, has caused tissue injury. In two of the present ten cases, barium was used to outline the site of perforation and caused no complication. Nevertheless, when apprised of the possibility of esophageal rupture, it is our policy to use opaque media other than barium. If the clinician is aware of the

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From the Department of Radiology, San Francisco General Hospital, San Francisco 10.

Presented before the Section on Radiology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

TABLE 1.—*Clinical Data in Ten Cases of Iatrogenic Perforation of the Esophagus*

Case No.	Age	Sex	Diagnosis and Procedure	Perforation Location	Roentgen Findings	Therapy	Result
1.	75	M	Carcinoma of esophagus Esophagoscopy	Middle third	Right lower lobe consolidation. Gastric tube in right lower quad.	Supportive	Died
2.	38	M	Esophageal varices Sengstaken tube	Lower third	Perforation shown with Lipiodol.® Tube in rt. pleural space.	Primary closure and drainage	Died
3.	1½	F	Lye stricture mid-third Esophagoscopy and bougie	Middle third	Mediastinal and subcutaneous emphysema. Effusion — pericardial and pleural.	Supportive	Died
4.	60	F	Hiatal hernia esophagitis Esophagoscopy	Junction upper and middle third	Perforation shown with barium.	Supportive	Excellent
5.	63	F	Hiatal hernia Esophagoscopy	Lower third	Left hydropneumothorax.	Drainage	Excellent
6.	51	F	Suspected foreign body Esophagoscopy	Upper third	Subcutaneous emphysema.	Drainage	Excellent
7.	74	M	Hiatal hernia Esophagoscopy	Junction upper and middle third	Subcutaneous emphysema.	Drainage	Good (divertic. at perf. site)
8.	69	F	Carcinoma of esophagus Esophagoscopy	Upper third	Subcutaneous emphysema. Perf. shown with Lipiodol.	Drainage	Excellent
9.	53	M	Anoxia Tracheotomy (Broken B-P blade)	Upper third	Paraesophageal abscess. Foreign body in esophagus.	Primary closure and drainage	Excellent
10.	47	F	Chemical burn Esophagoscopy	Lower third	Right empyema perf. shown with barium.	Drainage decortication	Excellent

possibility of perforation and roentgen study is done promptly, the diagnosis and site of perforation should be established within a few hours of rupture.

THERAPY

The detailed management of a patient with instrumental esophageal perforation is beyond the scope of this presentation but a few observations pertinent to the management of the ten patients in the present series are worth discussion. In general, aggressive surgical management provided the most satisfactory result. But whether the procedure involved drainage of the area or primary closure of the esophagus with placement of drains, did not influence the outcome significantly in this series. Of the three patients receiving only supportive management, two died. In one case (that of the only other patient in this series who died) primary closure with drainage was not done. However, as can be seen in Figure 2, the perforation in that case was most unusual; the rent was more than 12 cm. long. In one of the seven surviving patients a diverticulum developed at the site of perforation. In this small series there was no valid correlation between the promptness of operation after perforation occurred and the therapeutic outcome.

REPORTS OF CASES

The following four cases are reported to illustrate some of the complications of esophageal perforation.

CASE 1. A 75-year-old man entered the hospital complaining of coughing and progressive difficulty in swallowing of five days' duration. Although he had noted some difficulty in swallowing solid foods for approximately a year, it was only during the week before admission that swallowing any food caused coughing. He had lost approximately ten pounds in weight. The patient appeared to be chronically ill but in no acute distress. Blood pressure was 160/82 mm. of mercury, pulse rate 120, respiration 24 per minute, and body temperature 102° F. There was a Grade II blowing apical systolic murmur. The heart was otherwise not remarkable. The lungs were clear. The clinical impression was carcinoma of the esophagus with tracheoesophageal fistula.

Following roentgen studies of the esophagus, an esophagoscope was introduced and the stricture was dilated. Esophagoscope examination was done five days later, at which time a biopsy specimen of the esophagus was taken and a polyethylene tube was thought to be inserted through the stenosis of the midesophagus into the stomach. Twenty-four hours

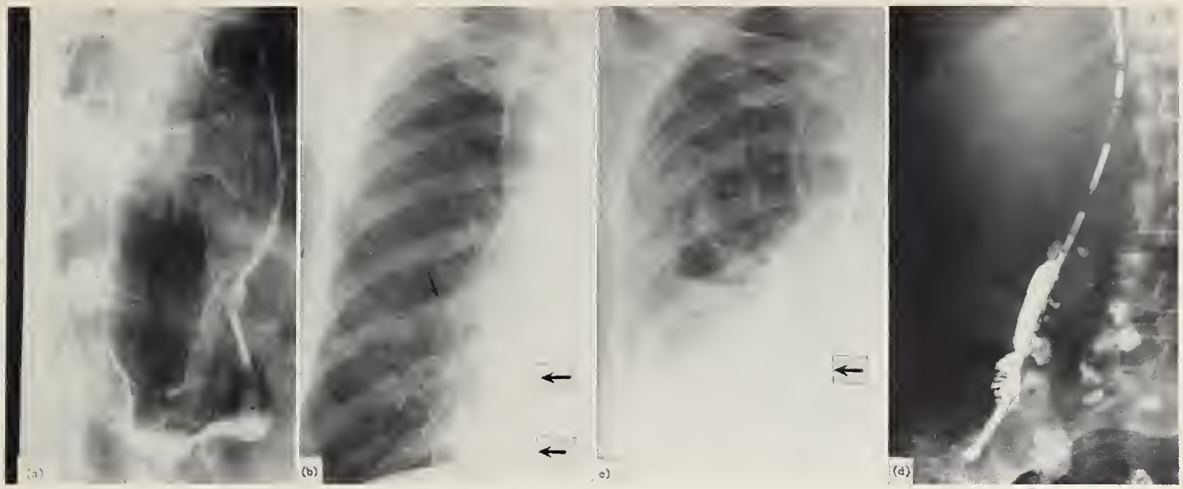


Figure 1.—Esophageal perforation due to a combination of carcinoma, esophagoscopy and intubation. (a) Spot film showing pronounced dilatation of esophagus with almost complete stenosis at level of bifurcation. (b) Conventional chest examination showing the dilated esophagus, barium in bronchi of the right lower lobe (*arrow*), and mediastinal abscess (*arrows*) (*retouched*). (c) Follow-up study of chest after the esophagoscopy demonstrated right lower lobe consolidation and course of tube through mediastinal abscess (*arrow*). (d) Gastric tube lying freely in peritoneal cavity with tip in right lower quadrant; tube presumably perforated the inferior border of the abscess and the diaphragm.

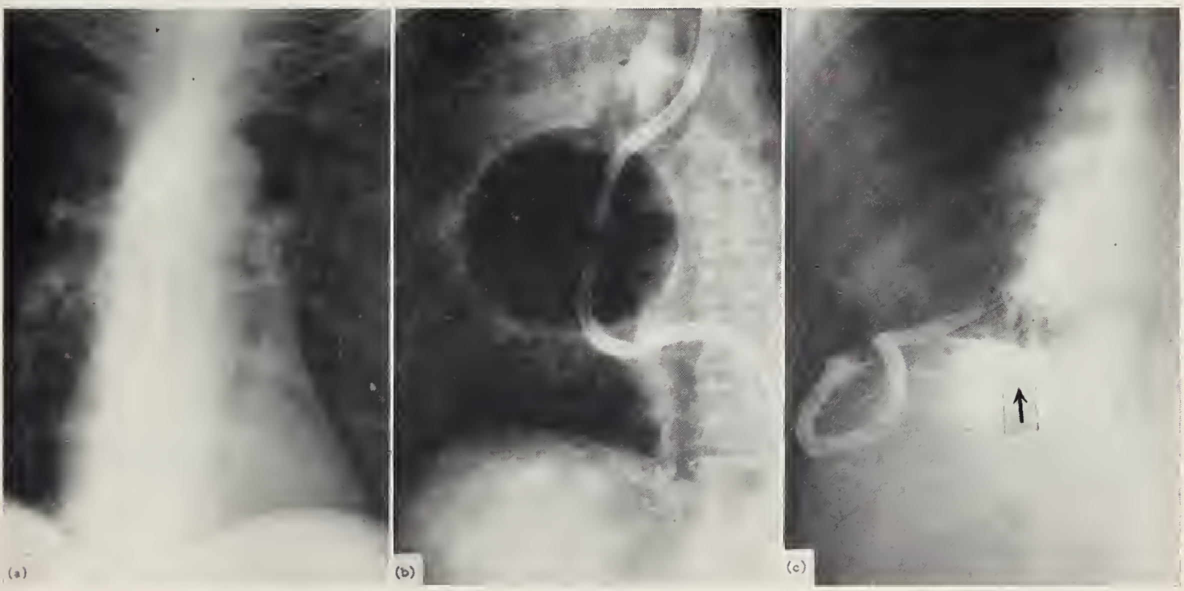


Figure 2.—Esophageal perforation following intubation. (a) Double-balloon tube (Sengstaken) in midesophagus; prior to taking the film, the attending physician felt the balloon was in the gastric fundus. (b) Tube following withdrawal, re-insertion and re-inflation. A film was not obtained prior to re-inflation, but this film demonstrates a fully inflated balloon free in the right pleural space adjacent to the right midmediastinum. (c) Balloon deflated. Further travel of the tube into the right pleural space. Note Lipiodol® between lung and diaphragm (*arrow*).

later the patient was noted to be dyspneic and there were moist rales throughout both lower lung fields. Thirty hours later there was an area of dullness at the right base and roentgen examination revealed consolidation in the right lower lung field. A small amount of Lipiodol® was injected into the polyethylene tube and roentgen studies were carried out. (Figure 1). No operative procedure was attempted. The patient received supportive therapy only and died the following morning.

Case 2. A 38-year-old man, a chronic alcoholic, entered the hospital with complaint of vomiting blood of three days' duration. He had been in the hospital a year previously with a similar complaint and was discharged with a diagnosis of Laennec's cirrhosis and esophageal varices. A month before the present admission the patient ceased eating and drank with increasing frequency. During this time any attempt at swallowing solid foods resulted in vomiting and he had repeated dark stools. Upon

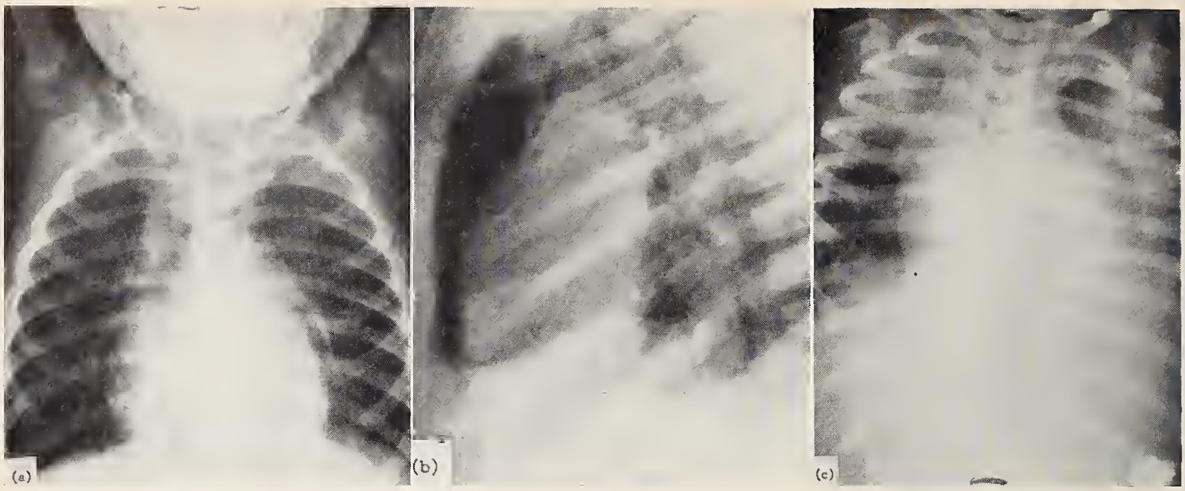


Figure 3.—Esophageal perforation following esophagoscopy and bouginage. (a), (b) Mediastinal and subcutaneous emphysema following esophagoscope perforation. (c) Infected pleural and pericardial fluid subsequent to perforation. Film made four days after a and b: patient expired two days later.

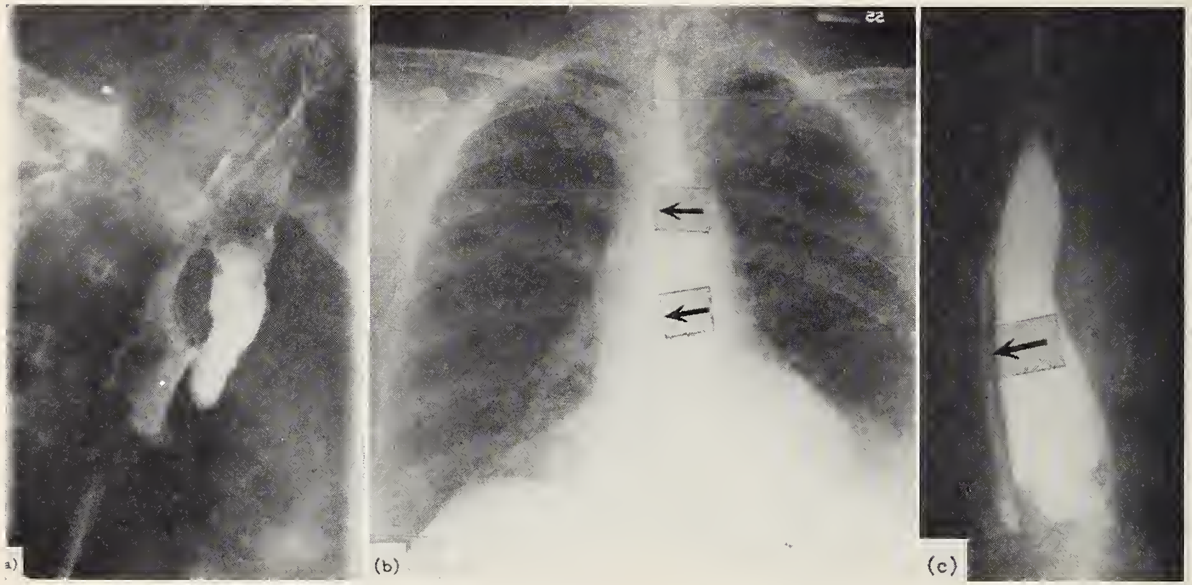


Figure 4.—Esophageal perforation following esophagoscopy. (a) Spot film showing perforation of esophagus near junction of upper and middle third outlined by barium. (b) Mediastinal tract opacified by barium; the esophagoscope had traversed this area. (c) Persistence of mediastinal tract outlined by barium one year following perforation.

physical examination he was observed to be poorly developed, undernourished, icteric and semiconscious. Blood pressure was 130/80 mm. of mercury, the pulse rate 84, and body temperature 99.2° F. Multiple spider angiomata were present over the arms and shoulders. The lungs were clear and the heart sounds were within normal limits. The liver was greatly enlarged.

A Sengstaken tube was passed, the stomach lavaged and an antacid drip was commenced. Roentgen examination at this time (Figure 2) showed the tube to be in the esophagus. It was withdrawn, reinserted, and filled with air. There was immediate pain in the right upper quadrant, radiating to the back, the pulse rate increased to 130, the temperature rose to 102° F. and mediastinal crepitus was present. Approximately four hours from the time of rupture, the patient was taken to surgery. A right thoracotomy incision revealed 1,000 cc. of blood and gastric contents in the right pleural space. The Sengstaken tube was lying free in the right pleural space and there were early inflammatory changes on all pleural surfaces. There was a rent in the esophagus 12 cm. in length, commencing at the junction of the middle and distal thirds. The tube was inserted through the distal intact esophagus, the rent was closed with interrupted sutures, and drains were placed in the right pleural space. Transfusions of thirteen units of blood were given but the patient died the following morning. At autopsy, multiple esophageal varices in addition to Laennec's cirrhosis were noted.

CASE 3. An 18-month-old girl entered the hospital for dilation of a stricture of the esophagus. Approximately fifteen months previously she had been admitted to the hospital following lye ingestion and a stricture of the midesophagus was subsequently demonstrated. Barium studies of the esophagus showed an area of stenosis at the level of the bifurcation of the trachea. Distal to the stenotic area the lumen was normal.

An esophagoscope was introduced and the esophagus was dilated with bougies at the point of stricture. Several hours later fullness was noted in both sides of the neck and roentgen examination (Figure 3) revealed subcutaneous and mediastinal emphysema. Large doses of antibiotics and supportive therapy were prescribed. There was a steady decline in the condition of the patient and she died six days later. At autopsy a 1 cm. perforation at the site of stenosis was observed.

CASE 4. A 60-year-old woman entered the hospital with complaint of difficulty in swallowing of several months' duration. The food seemed to stick in the lower end of the chest and she had occasional epigastric distress after eating. Upon esophagoscopic examination, a hiatal hernia was observed, with evidence of esophagitis. The hernia was subsequently repaired. When examined again several months later the patient still had difficulty in swallowing. Hiatal hernia again was observed. Twice more esophagoscopic examination was carried out, and the second time considerable inflammatory changes were seen in the distal esophagus. As there was also a moderate amount of bleeding, the procedure was discontinued. Two hours later the patient had severe pain in the chest and roentgen study with a barium swallow revealed extravasation of the material from the esophagus at the level of the thoracic inlet (Figure 4). Large doses of antibiotics and supportive fluids were prescribed and the patient recovered.

450 Sutter Street, San Francisco 8.

REFERENCES

1. Bernatz, P. E.: Management of esophageal perforations, Proc. Staff Meet., Mayo Clin., 31:671, 1956.

2. Gay, B. B., Jr.: Esophageal perforations, Am. J. Roent. & Rad. Ther., 68:183, 1952.

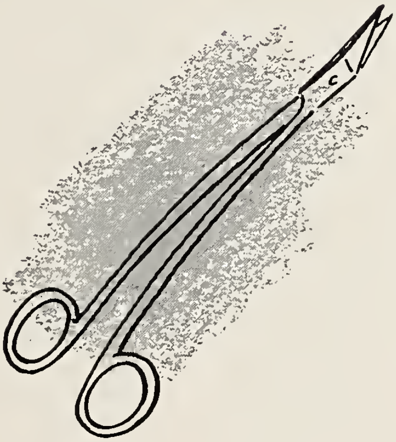
3. Jemerin, E. E.: Results of treatment of perforation of the esophagus, Ann. Surg., 128:971, 1948.

4. Overstreet, J. W., Ochsner, A.: Traumatic rupture of the esophagus, J. Thor. Surg., 30:164, 1955.

5. Palmer, E. D.: The Esophagus and Its Diseases, Paul B. Hoeber, Inc., 1952.

6. Seybold, W. D.: Perforation of the esophagus, Surg. Clin. North Am., 30:1155, 1950.

7. Touroff, A. S.: Perforation of cervical esophagus with gastroscope, Ann. Surg., 114:369, 1941.



Fatal Epistaxis

FRANCIS BERCHMANS QUINN, JR., *M.D.*, Los Angeles

• The instances in which nosebleed is potentially fatal are those in which there is a history of recent head injury, severe arteriosclerotic cardiovascular disease or an underlying vascular tumor in the nasal chambers. Fatal nasal bleeding has not been reported in children. An awareness on the part of the physician of the potentially fatal significance of his patient's nosebleed is the very best insurance against such an event. Intelligent history-taking, careful physical and x-ray examination, generous sedation, precise local cauterization and packing, estimation of hemoglobin mass and a search for bleeding and clotting disorders are the best weapons of the physician called to treat epistaxis. These procedures, coupled with adequate blood replacement and an informed attitude toward surgical interruption of the blood supply to the bleeding region should forestall death from fatal nosebleed.

ON THE NIGHT of November 27, 1957, a 27-year-old Negro man was admitted to Wadsworth General Hospital, Veterans Administration Center, Los Angeles, with a diagnosis of anemia of undetermined origin. Late that night, the genesis of the anemia became clear when a massive nasal hemorrhage developed that responded only to the insertion of a large postnasal pack. Questioning of the patient and his relatives elicited that three months before he had been in hospital elsewhere following a motorcycle accident in which he received a closed head injury that resulted in left hemiparesis and recurrent nosebleeds. The patient said that he had not had nosebleeds before the accident and that the episodes of bleeding were not preceded by nasal manipulation or physical exertion. There was no history of sickle cell disease, easy bruising, jaundice or familial bleeding tendencies.

The patient was pale and his memory poor. Also noted were left peripheral facial nerve paralysis, diminished sensation over the distribution of the left trigeminal nerve and a conductive hearing loss in the left ear. The hematocrit was 24 per cent, the hemoglobin content was 7.2 gm. per 100 cc. of blood, leukocytes numbered 5,050 per cu. mm. with a cell differential within normal limits, and bleeding and clotting times were normal. A Rumpel-Leede test was negative for capillary fragility. Careful review of the roentgenograms of the skull and face showed only a fracture of the left zygoma.

During his stay in the hospital the patient had several episodes of sudden, spontaneous, massive bleeding from the nose and mouth, controlled only by insertion of large postnasal packs and necessitating several transfusions. Because of the persistence and severity of these nosebleeds, the left external carotid artery was ligated on the morning of December 14, 1957. Nasal packing was removed and the patient apparently did well following this operation until, at 6 p.m., cataclysmic hemorrhage from the nasopharynx developed suddenly. Within three minutes of the onset of this hemorrhage a postnasal pack and anterior nasal pack were reinserted and a venous cutdown was begun. In five minutes, however, the patient was dead.

At autopsy a rent was noted in the intracranial portion of the left internal carotid artery which communicated with the interior of the sphenoid sinus and through the sphenoid ostium with the nasopharynx. Death might possibly have been averted had carotid angiography been included in the diagnostic studies which were undertaken to find the cause of epistaxis.

CASE 2. On December 30, 1957, a 68-year-old white man entered Wadsworth General Hospital for treatment of severe left-sided epistaxis. In January of 1956 he had been in hospital for the same disorder and, at that time, was bleeding from a point below the posterior tip of the left inferior turbinate. In April of 1957, he had been brought into the hospital for treatment of arteriosclerotic heart disease with angina pectoris. A recent examination directed at a disturbance of bowel function had indicated the presence of an annular lesion of the large bowel. On December 29, 1957, bleeding again commenced from the left side of the nose and the patient was brought into the hospital on the following day. There was no other history of bleeding diathesis.

Upon physical examination he was observed to be pale, calm and fairly alert, with definite slurring of speech but no obvious motor weakness. He complained of continuous pain in the chest and in both

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From the Department of Surgery, Division of Head and Neck Surgery, University of California Medical Center, Los Angeles 24, California, and the Surgical Service of Wadsworth General Hospital, Veterans Administration Center, Los Angeles 25.

Presented before the Section on Ear, Nose and Throat at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

arms. The blood pressure was 150/90 mm. of mercury. The pulse rate and temperature were within normal limits. Upon removal of a nasal pack that had been placed to stop the bleeding, epistaxis did not recur. No evidence was seen of tumor or infection of the nasal chambers or paranasal sinuses. The heart was not enlarged and there were no murmurs or rubs. The lungs were clear. Hemoglobin was 9.8 gm. per 100 cc. of blood and the hematocrit was 29 per cent. Leukocytes numbered 5,500 per cu. mm. A roentgenogram of the chest showed the heart, great vessels and lung fields to be within normal limits. An electrocardiogram was interpreted as consistent with subendocardial injury.

The patient was treated with nitroglycerin, ferrous sulfate, sedatives and bed rest. Bleeding from the nose did not recur, but the patient continued to complain of discomfort in the chest and arms. Because of the anemia and of coronary insufficiency indicated by progressive electrocardiographic changes, a transfusion was begun at 6:30 p.m. on January 7, 1958. Within a half hour the patient began to perspire profusely and the skin became ashen. He complained of fairly severe pain in the chest. At 8:15 p.m. respirations became labored and oxygen was administered. At 8:30 p.m. the patient died.

Permission to perform examination postmortem could not be obtained. While the nosebleed in that case may appear to have been incidental to the already existing coronary artery disease and bowel carcinoma, the addition of blood loss may have upset the tenuous cardiovascular equilibrium enough to bring about intolerable coronary insufficiency. The possibility that death was caused by a reaction to the transfusion was considered, but was discarded after consultation with the medical staff and examination of the blood remaining in the transfusion flask for mismatching and bacterial contamination.

The feelings of profound chagrin and defeat arising from my personal experience in treating these two patients led me to search the literature for instances in which epistaxis, generally a banal and simply bothersome affliction, had assumed fatal proportions. The search was well rewarded. It turned out that the two cases described above were illustrative examples of the pathologic events culminating in death from nosebleed: A review of the records of the U. S. Veterans Administration Hospital at Los Angeles from 1949 to 1958 disclosed two additional cases of fatal epistaxis.

Nosebleeds spare no age group. They occur in the toddler who falls and strikes his nose, in the nervous nose-picker ("epistaxis digitorum") and in elderly arteriosclerotic persons. The usual local causes are foreign body, instrumental or digital manipulation, blows to the nose and infections and tumors of the nasal chambers. The generalized conditions which can lead to nasal hemorrhage are blood disturbances, such as leukemia and polycythemia, and disorders of the coagulation mechanism, as well as rheumatic fever and scurvy. Increased venous pressure as from emphysema, prolonged coughing or straining and tumors of the neck and upper mediastinum have also been cited as causative conditions. The nosebleeds that physicians most often see in children and adults are those associated with blunt trauma to the nose or maladroit cleansing of the nasal passages. Nosebleeds among the elderly are distressingly frequent, usually arising from the posterior portion of the nasal fossa and generally defying etiologic diagnosis. In the older patients, epistaxis is often associated with increased arterial pressure and evidences of arteriosclerosis. The association may be fortuitous, however, for hypertension and medical sclerosis are recognized manifestations of the senium, and nosebleed is commonly seen in their absence.

Halberg[7] effectively summarized the etiology of epistaxis in his report of 212 cases at the Mayo Clinic. In that series, 50.9 per cent of patients were over 54 years of age and in approximately 80 per cent of them the bleeding ceased spontaneously.

In his diagnostic endeavors the clinician is limited to a search for the most common causative factors and must attempt to exclude potentially serious but undiscovered illness of which the nasal hemorrhage may be the first sign. When considering fatal epistaxis, we must pay particular attention to the nasal hemorrhage that follows a head injury. Here, the basilar skull fracture has a definite role in that the line of fracture may intersect the course of a major blood vessel with resulting hemorrhage into the nasal chambers, paranasal sinuses, eustachian tube or nasopharynx. Additionally, these fractures of the floor of the brain case are difficult to detect radiologically, often remaining undiagnosed until postmortem examination. As a general rule, the injuries that result in the fortunately rare instances of massive, life-threatening epistaxis are those in which the anterior ethmoid artery or the internal carotid artery is torn. Injury to the latter vessel is sometimes associated with disturbances of vision, of facial sensation or of pituitary function and is accompanied by premonitory aura or intracranial bruit.

REVIEW OF THE LITERATURE

In a review of the medical literature for the preceding 100 years, reports were found of a number of cases of fatal nosebleed. The first account of such a case was given by Levy[10] who, in 1896, described a 20-year-old white male miner who was struck on the jaw in an occupational accident in Colorado. Immediately after the injury severe epistaxis developed. It recurred repeatedly and was associated with suppurative otitis media and mastoiditis. Thirty-eight days after the injury, loss of blood from a nosebleed was great enough to cause death. Autopsy showed a "septic fistula" between the middle meningeal artery and the eustachian tube in the region of the foramen spinosum.

Matthews[11] in 1898 briefly mentioned a case of spontaneous fatal nasal hemorrhage in a 19-year-old boy who had "bilious fever." In 1899 Dock[6] discussed a 37-year-old man who had a fatal nasal hemorrhage arising from an "endothelioma carcinomatosum" of the turbinated nasal bones.

Kummel[9] in 1928 recounted the case of a 23-year-old man who received a head injury in a motorcycle accident. The blow left him unconscious and bleeding from the nose, mouth and right ear. He recovered rapidly but thereafter had spontaneous, severe epistaxis at approximately two-week intervals, accompanied by severe temporal headache which was worse on the left side. Sixty-eight days after the injury, total amaurosis supervened in the right eye, which showed a pale disc and extremely narrow retinal vessels. Ten weeks after the accident, the patient suddenly had tremendous hemorrhage from the nose and mouth and died within several minutes. Autopsy indicated that the bleeding was a result of a fissure in the thin bony wall between the sphenoid sinus of the internal carotid artery which communicated with a small laceration of the artery itself. This situation had led to the formation of an aneurysm of this vessel which produced pressure upon the second branch of the trigeminal, the sphenopalatine and, presumably, the optic nerves, resulting in the temporal headaches and blindness.

Bonnet,[3] in 1935, presented a similar instance of traumatic aneurysm of the internal carotid artery within the sphenoid sinus in a 31-year-old woman who three months earlier had had a fracture of the floor of the anterior fossa from a blow on the frontal region. Epistaxis which occurred immediately following the injury was treated by ligation of the external carotid artery, without success. Within three months of the injury, the right eye had become blind and the oculomotor nerve on that side had become paralyzed. Angiograms showed an intrasphenoidal carotid aneurysm. Ligation of the right internal carotid artery did not prevent a fatal nasal hemorrhage.

Bean,[1] in 1937, in a study of conditions which predisposed to myocardial infarction, cited one case in which severe epistaxis had led to a profound anemia and death. At postmortem examination, a fresh myocardial infarction was found. He also reported a case of fatal myocardial infarction following hemorrhage from a peptic ulcer, as well as two cases of infarction in patients who had profound anemia.

In 1939, Davis[5] recorded the case of a 17-year-old boy who was struck in the nose by a fist and received fractures of the nasal bones and the nasal processes of the maxilla. This was attended by severe epistaxis which eluded all attempts at control short of ligation of the major vessels and caused death on the night of injury. Postmortem examination showed the anterior ethmoid artery to be ruptured.

Rasquin,[13] in 1949, described his experience with a 46-year-old farmer who, for two years, endured recurrent epistaxis preceded by an aura of painful pulsations and a "heavy feeling" in the left temporal region. The nosebleeds were as remarkable for their brevity as for their severity. At one point the patient lost 950 cc. of blood in just 20 seconds. Exploration of the left maxillary sinus, ligation of the internal maxillary artery in the pterygomaxillary fossa, ligation of the external carotid artery and the application of intranasal radium therapy did not halt the episodes of nasal hemorrhage. As the bleeding continued, hemiplegia developed and the patient died two days later. Postmortem examination was not performed, but the author suggested the possibility of an aneurysm of the internal carotid artery as the underlying cause of the hemorrhages.

Bourdon,[4] in 1952, reported the case of a 30-year-old man with spontaneous persistent epistaxis despite the appearance of excellent general health. Within a few weeks fever and leukocytosis developed; the peripheral blood assumed the appearance of leukemia. Seven days later the epistaxis ceased, but on the following day the patient died. Postmortem examination was not reported.

Sigiuer,[15] in 1954, told of a 50-year-old white man who had the florid complexion typical of alcoholics and hepatosplenomegaly suggestive of Laennec's cirrhosis. The patient steadfastly denied the use of alcohol in any form or quantity, stating that his father had died a drunkard and as a result he himself had formed a lasting antipathy to liquor. The patient had been plagued with nosebleeds since the age of six years. Further, his father, brothers and two nephews had the same affliction. One brother died of spontaneous hemothorax, secondary to a pulmonary arteriovenous aneurysm. Upon careful examination of the patient, multiple, mucosal telangiectases were observed in the oral and nasal cavities. Despite vigorous local treatment, the patient died of a spontaneous nasal hemorrhage, a consequence of Osler-Weber-Rendu syndrome.

Hrenoff,[8] in 1954, wrote of his experiences in the treatment of a 61-year-old hypertensive man who had severe recurrent epistaxis that reduced the hemoglobin content to 7 gm. per 100 cc. of blood. The patient was given Bistrium® (hexamethonium) to reduce the arterial pressure, but the patient died that night. The Bistrium® combined with the anemia due to blood loss caused fatal circulatory collapse.

Seftel,[14] in 1959, discussed epistaxis resulting from rupture of an intracranial aneurysm and presented the case of a 20-year-old man who died of exsanguination from this cause five months after receiving a head injury. He had had repeated, small nosebleeds in the interim and the fatal hemorrhage was from the nose and mouth.

From these recorded experiences, we see that death from nasal hemorrhage may be the result of simple exsanguination or it can represent the combination of a preexisting limited circulatory reserve upon which profound anemia is suddenly imposed. Loss of blood great enough to cause death may follow a blow to the head or may be associated with defective blood coagulation, with nasal hemangiomata or with idiopathic aneurysm of the internal carotid artery.

DIAGNOSTIC PROCEDURES

A careful history is always desirable but not always obtainable when dealing with a person whose overwhelming concern is the arrest of nasal hemorrhage. Once the bleeding has been controlled, it is of importance to search the patient's history for possible clues as to the genesis. Questions should be asked that will bring to light any diseases of the cardiovascular system, the blood-forming tissues and the blood-coagulating mechanism. The presence of a neoplasm in the nose or paranasal sinuses must be suspected, and the patient should be questioned carefully with regard to recent head injury and nasal trauma. The interrogator is wise also to pay close attention to symptoms suggesting coronary artery insufficiency or cerebrovascular disease, for these conditions can assume critical importance in the presence of sudden severe blood loss.

Of utmost importance in the definitive treatment of severe epistaxis by cautery, packing or ligation is the accurate localization of the source of the bleeding. For this purpose, a neurosurgical suction tip supported by a vigorous suction machine, an optically accurate head-mirror and a strong source of illumination are desirable. The importance of accurate identification of the bleeding area cannot be overstressed, particularly in cases in which ligation of the major vessel appears necessary; for the decision concerning which vessel to ligate rests largely upon this observation. As a matter of routine, determinations should be made of the hemoglobin mass, of bleeding and clotting time and prothrombin time and the concentration of platelets. Morphologic studies of the blood should be carried out.

THERAPY

The most desirable methods of arresting nasal bleeding are those that compress or destroy the bleeding vessel yet inflict a minimum of injury to the surrounding structures and cause the least discomfort to the patient. Precise, firm packing over the offending vessels, either alone or in combination with electrical or chemical coagulation of the bleeding point, will control nosebleed in most cases. The details of various methods of local therapy have been splendidly presented by Ogura[12] and Beinfield.[2]

In general the most troublesome nasal hemorrhages arise from the relatively inaccessible regions of the olfactory cleft and the posterior choanae. In these cases cauterization is often impossible and bleeding cannot be controlled by anterior packing. In such circumstances a posterior choanal or nasopharyngeal pack may be required, not once, but repeatedly. Various forms of systemic therapy, including administration of vitamins C, K, and P, together with estrogenic substances and pituitrins, have been recommended.

While centering attention on the source of bleeding, the physician must be mindful of the effect of blood loss upon the patient, watchful for signs of approaching hypovolemic shock and ready to order intravenous infusion of plasma expanders or whole blood. It is not the presence of blood in the nose but the lack of blood in the vascular system that causes death.

Generous sedation optimally in the form of morphine sulfate is both the gesture of kindness and an effective hemostatic maneuver. Anxious, tense patients bleed more freely, probably as a result of the elevated arterial pressure in combination with the nasal vascular engorgement seen in emotional stress. Frequently overhearing a telephoned order for morphine sulfate will stop the bleeding before the physician arrives on the ward.

Appropriate surgical treatment of severe nosebleed includes a number of techniques. One is sometimes required to reduce a severely deflected nasal septum that is hiding the source of the bleeding. Should the bleeding point lie upon the septum itself, the scarring that follows the operation will often permanently obliterate the vessel. In cases of posterior epistaxis, it is sometimes expedient to infract the inferior turbinate on the side of the bleeding, thus obtaining clear access to the posterior portion to the inferior nasal meatus, the most common site of posterior nasal hemorrhage. Until recently ligation of major arteries for the control of epistaxis had been regarded as a last resort, to be used only when the hemorrhage assumed life-threatening proportions. The earliest ligations for this purpose were performed upon the common carotid artery. The mortality from this procedure relegated it to the hands of a surgeon "at bay." Today, the external carotid artery and the anterior ethmoid artery are the vessels most commonly interrupted in the treatment of severe nasal bleeding. The techniques of ligation employed upon these vessels carry with them a very small morbidity and no mortality whatsoever, as far as has been reported. The operations can be performed under local anesthesia and leave a minimum of external scarring. When the point of origin of the nosebleed can be accurately localized to the areas subserved by either of these vessels, arterial ligation is followed by prompt and permanent cessation of epistaxis.

15225 Vanowen Street, Van Nuys.

REFERENCES

1. Bean, W. B.: Infarction of the heart: A morphological and clinical appraisal of 300 cases, Am. Heart J., 14:684-702, 1937.

2. Beinfield, H. H.: General principles in the treatment of nasal hemorrhage, Arch. Otolaryng., 57:51-59, 1953.

3. Bonnet, M. P.: Épistaxis mortelle, Rev. d'oto-neuro-opht., 27:304, 1928.

4. Bourdon, E.: Leucose aigue monosymptomatique (épistaxis), Ann. d'otolaryng., 69:607-608, 1952.

5. Davis, E. D. D.: Severe epistaxis, difficult to control, Brit. Med. J., 1:721-723, 1939.

6. Dock, G.: A case of fatal epistaxis, Tr. A. Am. Physicians, 14:125-136, 1899.

7. Halberg, O. E.: Severe nosebleed and its treatment, J.A.M.A., 148:355-360, 1952.

8. Hrenoff, A. K.: Hexamethonium contributing to fatal shock in hypertensive epistaxis, Calif. Med., 81:417, 1954.

9. Kummel, W.: A case of fatal epistaxis, Ztschr. Hals-nasen-und-Ohren, 21:304, 1928.

10. Levy, R.: Fatal hemorrhage from the nose and pharynx, Tr. Colorado M. Soc., pp. 100-103, 1896.

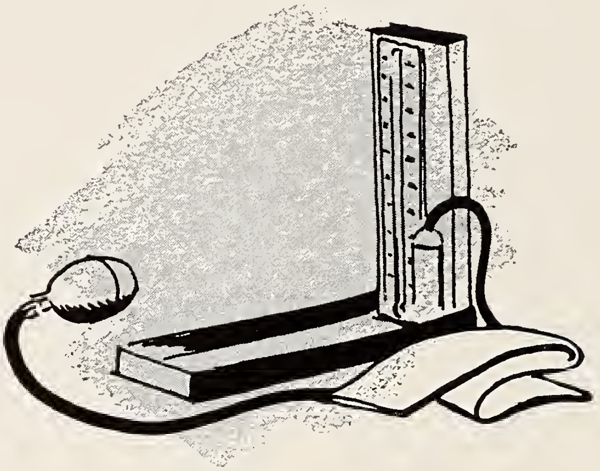
11. Matthews, J. B.: Death from hemorrhage caused by rupture of the deep vessels of the nose, Med. Regis. Richmond, 1:412, 1897-1898.

12. Ogura, J. H.: Epistaxis, Laryngoscope, 59:743-763, 1949.

13. Rasquin, P.: Un cas rare d'hémorragie nasale mortelle, Ann. d'oto-laryng., 66:445-449, 1949.

14. Seftel, D. M.: Ruptured intracranial carotid artery aneurysm with fatal epistaxis, Arch. Otolaryng., 70:52, 1959.

15. Sigiuer, F.: Àpropos d'une épistaxis mortelle, Press med., 62:1594, 1954.



Clinical Experience With Fluether* Anesthesia

R. W. M. BETHUNE, *M.D.*, and HENRY UPHOLT, *M.D.*, Los Angeles

• Fluether, an azeotropic mixture of two volumes of Fluothane® and one volume of diethyl ether, will provide satisfactory surgical anesthesia in a range of vapor concentration from 0.5 per cent v/v to 4.0 per cent v/v. The agent was used in all age groups and in all patient physical states in approximately a thousand cases.

To date there have appeared no contraindications to the use of fluether anesthesia.

Bradycardia is common during induction but is easily reversible by use of belladonna compounds.

During maintenance of anesthesia, significant muscular relaxation is provided, without evidence of electrocortical depression.

Respiratory depression accompanies a maintenance level of anesthesia.

Recovery after anesthesia with fluether is rapid but tranquil. Considerable analgesia persists during recovery.

The elucidation of the anesthetic properties of Fluothane® by Raventos[6] in 1956 marked the introduction of one of the most potent and versatile agents into modern anesthesia. There is no doubt that Fluothane® is already firmly established as a major anesthetic as evidenced by the thousands of reported cases in which it was used, and undoubtedly many more thousands unreported. In 1958 Hudon,[4] reporting on the use of a mixture of Fluothane® and diethyl ether, suggested that the clinical advantages of this mixture included ease of management, less depression of blood pressure and of respiration as compared with pure Fluothane® anesthesia. This mixture of two volumes of Fluothane® and one volume of diethyl ether is described as an azeotrope although it more closely resembles a compound in the liquid state, vaporizes in a fixed ratio identical to that of the liquid residue—that is, two volumes of Fluothane® vapor to one volume of ether vapor. For ease of reference, this mixture is termed "fluether."

Our use of fluether was undertaken not to assess a substitute or alternative for any existing agent but to evaluate this mixture clinically as an additional anesthetic agent. To assess fluether clinically it must be compared under conditions similar to those in which existing anesthetic agents are used, although purposeful comparison is not the basis of this report. It is the intent of our anesthesia method when using any agent to provide only a light level of anesthesia and to secure muscular relaxation as needed by supplemental use of nonanesthetic relaxant drugs. It is rarely, if ever, our aim to attempt to provide both analgesia and relaxation with one drug or agent. We believe that true anesthesia of sufficient depth to provide profound muscular relaxation will provoke more severe physiological changes of a deleterious nature than will the so-called "light anesthesia" plus relaxants.

Material

Fluether was used in approximately a thousand cases in a period of 14 months. Our clinical experience covers all age groups (the youngest patient, 36 hours) and all physical states and circumstances of operation, from "healthy, elective" to the "critical, emergency." With the exception of cardiopulmonary by-pass procedures and obstetrical procedures, surgical operations of all types are included in this report.

Apparatus

In most of the early cases a Fluotec® vaporizer was used to deliver a controlled vapor concentration to a non-return circuit. As experience was gained, other vaporizers and other circuits were employed. At present, fluether is administered in semi-closed, closed, and non-return circuits using a variety of vaporizers, such as the Ohio Vernitrol,® Foregger Copper Kettle,® Ohio Fluothane Vaporizer® and Fluotec.® It should be noted that all these circuits are assemblies of the "out-of-circle" type. Fluether has also been used by catheter insufflation for bronchoscopy and for laryngoscopy.

Using assemblies of the "out-of-circle" type as mentioned above, the expression of per cent fluether vapor as it appears in subsequent paragraphs refers only to the concentrations delivered from the anesthesia machine to the patient breathing circuit. When a closed or semi-closed breathing circuit is employed, this measured vapor concentration will be altered by the admixture of the patient's exhalations, and the actual inhaled gas will be of unknown vapor concentration.

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*An azeotropic mixture of two volumes of Fluothane® and one volume of diethyl ether.

From the Division of Anesthesia, UCLA Medical Center (Bethune) and Morningside Hospital, Los Angeles (Upholt).

Presented before the Section on Anesthesiology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Induction

The induction is smooth and rapid, both in children and in adults, although in the latter patients a sleep dose of thiobarbiturate is usual. There is noticeable absence of salivation during induction, a circumstance well appreciated in pediatric anesthesia. There is no respiratory rejection of the vapor by the patient and maximum induction concentrations (up to 4 per cent v/v or 5 per cent v/v) can be delivered after a few breaths without irritation or breath holding. Intubation can be performed easily after a fluether induction, pharyngeal and laryngeal reflexes being remarkably quiescent. It is more usual to use succinylcholine to facilitate direct oral intubation in both adults and children, and there seems to be no reason to withhold this drug in any case in which its use might obviate even a remote possibility of injury.

Induction concentrations of 3 per cent volume-for-volume to 4 per cent v/v are delivered from the vaporizer with a half-and-half mixture of oxygen and nitrous oxide at a total diluent flow rate of 4 to 5 liters per minute. This induction concentration of vapor and diluent flow is continued for about ten minutes, provided the blood pressure change is not extreme. As with Fluothane® anesthesia, the calm, quiet induction of fluether may give a false impression of depth of anesthesia and too early stimulation will provoke a very vigorous response. During induction some pulse rate slowing is fairly common; atropine or other belladonna compounds are used early and in sufficient doses to provide a suitable increase in heart rate.

During some phase of the induction, frequently in the early minutes, there will usually be mild to moderate depression of the blood pressure as compared with the pressure before anesthesia. Abrupt and profound hypotension as seen occasionally with Fluothane® induction has not been apparent when using fluether in comparable concentration. The occurrence of moderate depression of blood pressure signals the end of delivery of higher fluether concentrations but does not, per se, indicate anesthesia of sufficient degree to permit surgical stimulation; rather, this agent, as indeed any agent, must be delivered over a variable but sufficient time before adequate anesthesia will result. This blood pressure depression is used only as a guide for the proper setting of the vaporizer control to maintain the desired depth of anesthesia. The limit of the blood pressure depression is planned to be about 30 mm. of mercury below the pre-anesthetic reading in normotensive subjects. If this limit is considered excessive for any patient—as it might be for, say, a patient in shock or one with heart disease or hypertension—or if the limit is grossly exceeded, reduction in the concentration of fluether vapor delivered will readily reverse the decrease in pressure. The intravenous injection of atropine at this time will also help to elevate the blood pressure. Rarely, have we found vasopressor agents necessary, and use of them is becoming even less frequent as we gain in experience in the use of this anesthetic. After the period of induction at high total gas flows, there is adequate denitrogenization, and reduced total flow for closed circuit technique can be administered if desired.

Maintenance

Maintenance concentration of fluether vapor delivered into circuit will vary from less than 1 per cent v/v to about 3 per cent v/v. The most reliable guide to this concentration is the level and stability of the blood pressure; as previously mentioned, an acceptable vapor concentration usually results in a stable but slightly depressed blood pressure. As in anesthesia using any agent, if maintenance doses of fluether are inadequate, stimulation will result in an elevation of the blood pressure.

When using the Fluotec® vaporizer the total gas flow, whether oxygen alone or a mixture of nitrous oxide and oxygen, is not reduced below one liter per minute, because of variability of the vapor concentrations with this instrument at lower flow rates. With the "Copper Kettle"® and vaporizers of similar type, lower total flow rates are sometimes used, although no persistent attempt is made to provide completely closed-circuit anesthesia in the majority of cases.

Repeated electroencephalographic recordings in cases in which this method of maintenance was used resulted in electrocortical patterns indicative of "light" anesthesia—that is, fast activity (15 to 20 cycles per second) with voltages up to 100 microvolts and only occasional areas of mixed fast and slower patterns. There has been no "burst suppression" attributable to the level of anesthesia. No respiratory stimulation in depth or minute volume has been consistently observed during fluether anesthesia. Light anesthesia with adequate pulmonary ventilation provide optimum conditions in respect to patient physiological response to anesthesia.[2,3] Fluether anesthesia is accompanied by some respiratory depression and it is our invariable habit to assist or control the ventilation during the course of the anesthesia.

Light anesthesia with fluether will provide appreciable muscular relaxation, usually adequate for major portions of pelvic laparotomy, genito-urinary procedures and other surgical adventures not demanding the cadaveric conditions requested for complicated upper abdominal procedures. If relaxation of a greater degree than that provided by the fluether anesthesia is required or requested, this additional relaxation is accomplished by the use of succinylcholine, either by intermittent dose method or by continuous drip, depending on the surgical situation. The level of anesthesia is not changed to attempt to provide relaxation in these circumstances; our preference is to maintain a steady state of anesthesia and supplement with succinylcholine as required. The choice of succinylcholine as the relaxant is based on the circumstances involved in its use; namely, requirements for relaxation over and above that which is intrinsic in the anesthesia will be discontinuous as the surgical demands vary, and it seems that a controllable, short-acting agent would most specifically meet the needs of the situation. There has not been any case of "prolonged" apnea with the use of fluether and succinylcholine in this series, even though in some of the cases anesthesia was maintained for 8 or 9 hours.

Termination

When the anesthesia has been of such duration that a stable plasma level of drug can reasonably be assumed (that is, when there is equilibrium with a fixed vapor concentration in inspired air), it is desirable to discontinue the delivery of vapor about thirty minutes before the operation is expected to be finished. This early but calculated cessation of vapor administration will avoid the apparently prolonged periods of recovery that have been reported.[1] Although recovery time is a very difficult parameter to evaluate, and no attempt has been made to measure this factor accurately in this series, certainly in cases where the anesthesia has been brief and the operation uncomplicated the recovery time is as short as could be desired. In cases in which the anesthesia is prolonged or the operation of great magnitude, it has been impossible to correlate recovery time with anesthesia method or agent. The emergence from fluether anesthesia is smooth, quiet, and unattended by the abrupt, excited awakening sometimes seen after Fluothane® anesthesia, especially in children. We believe that this tranquil recovery after fluether is indicative of a significant degree of postoperative analgesia. In a few patients observed in the recovery room the incidence of nausea and vomiting was greater after fluether than after Fluothane.® but no statistical analysis on this point was attempted. The occurrence of nausea and vomiting is the common episode coinciding with first few minutes of waking and is rarely repetitive. Persistent vomiting did not occur in this series.

DISCUSSION

The azeotropic mixture of two volumes of Fluothane® and one volume of diethyl ether has been used satisfactorily for over a year in many varieties of circumstances.

In the decision as to what method and agent to use for anesthesia, certain standards should be observed for patient safety and satisfaction as well as for practical ease of management for the anesthesiologist. Among these standards are:

1. Agents should be applicable for use in a vast majority of cases, not restricted by age or physical condition of patient or type of proposed operation.

2. The same agent should be applicable for both induction and maintenance of anesthesia. This is especially referable to pediatric anesthesia.

3. The anesthetic agent and method should not be objectionable to the patient.

4. The anesthesia should be adequate without sacrifice of acceptable oxygen concentrations.

5. The anesthesia should be satisfactory but not at the expense of secondary physiological derangements.

6. Because of the prevalence of various electrical devices in the operating rooms, the preferred anesthesia should be nonexplosive.

At the present state of experience with fluether anesthesia, it is considered that this agent does, in fact, satisfy these standards for use.

There have been no circumstances so far encountered that prohibit or restrict the use of fluether anesthesia. The induction of anesthesia is smooth, rapid, and pleasant for the patient; emergence is quiet and not so abrupt as to create excitement. Significant analgesia appears to accompany the emergence, lessening the need for sedation in the immediate postoperative period. Maintenance of anesthesia can be provided with fluether vapor concentrations of from less than 1 per cent v/v to 3 per cent v/v and therefore the diluent can contain any portion of oxygen that is desired up to approximately 96 or 98 per cent. Fluether vapor is compatible with all other anesthetic agents in common use today, also with all relaxants although some restrictions pertain to the use of d-tubocurare because of the additive effects of Fluothane.® ether and the curare.[7] The vapor is stable in the presence of soda lime. Severe hypotension has not occurred in degree or frequency to compare with similar experience using Fluothane.® Possibly this reflects the stimulating effect of the ether fraction on the autonomic system and partial compensation of the pronounced hypotensive properties of Fluothane.®[5]

In the range of anesthesia concentrations, the vapor is nonexplosive and therefore there is no restriction on the use of any electrical devices.

The concomitant use of fluether anesthesia and local infiltration with solutions containing epinephrine is discouraged, although this has occurred inadvertently on several occasions without ill effect.

U.C.L.A. Medical Center, Los Angeles 24 (Bethune).

REFERENCES

1. Adams, A. K., Lambrechts, W., and Parkhouse, J.: Clinical trial of an azeotropic mixture, Acta Anaesth. Scandinav., 3:189, 1959.

2. Dobkin, A. B., Drummond, K., and Purkin, N.: Anesthesia with the azeotropic mixture of halothane and diethyl ether, Brit. J. Anaesth., 31:53, 1959.

3. Dobkin, A. B.: Circulatory dynamics during light halothane anesthesia, Brit. J. Anaesth., 30:568, 1958.

4. Hudon, F., Jacques, A., and Boivin, P. A.: Fluothane-ether: An azeotropic mixture, Canad. Anaes. Soc. J., 5:403, 1958.

5. Price, H. L., Linde, H. W., Jones, R. E., Black, G. W., and Price, M. L.: Sympatho-adrenal responses to general anesthesia in man and their relation to hemodynamics, Anaesthesiology, 20:563, 1959

6. Raventos, J.: The action of fluothane—a new volatile anaesthetic, Brit. J. Pharmacol., 11:394, 1956.

7. Sabawala, P. B., and Dillon, J. B.: Action of volatile anaesthetics on human muscle preparations. Anaesthesiology 19:587, 1958.

ANNUAL SESSION PROGRAM

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MARCH ISSUE

CASE REPORTS

Occlusion of the Middle Cerebral Artery in Children

A Report of Two Cases

BURTON L. WISE, *M.D.*, and
PETER COHEN, *M.D.*, San Francisco

Spontaneous occlusion of major intracranial arteries is relatively common in adults but has been considered to be rare in infants and children. Many of the reported instances of cerebral vascular occlusions in childhood have occurred in patients with cardiac disease.[1,9] The clinical entity of acute infantile hemiplegia has been assumed to be due to occlusions of cerebral vessels, although verification of this has been infrequent.[5] A recent report by Banker,[1] based on postmortem material, suggests that cerebral vascular disease in childhood is more common than previously suspected.

The increased use of cerebral angiography in children, as well as careful postmortem examination, has contributed to the understanding of these conditions. Fisher and Friedmann[4] reviewed the literature, found reports of 16 patients aged 15 years or less with thrombosis of the internal carotid artery, and reported one additional case. Stevens[8] reported upon three children with internal carotid artery occlusion, two of whom were included in the previous compilation.[4] Duffy and coworkers[3] de-

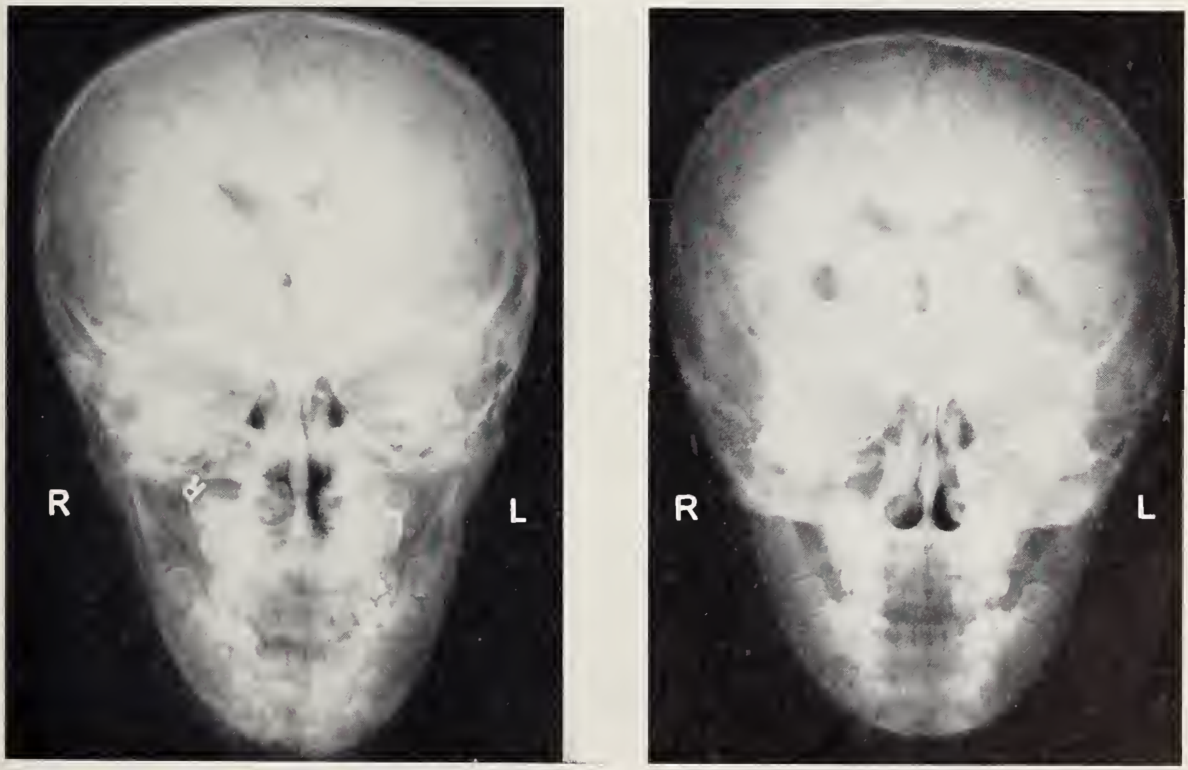

Figure 1 (Case 1).—*Left*, antero-posterior encephalogram and, *right*, postero-anterior encephalogram showing right lateral ventricle slightly larger than left.

From the Division of Neurological Surgery and the Department of Pediatrics, University of California School of Medicine, San Francisco.

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scribed the pathological findings in a 16-month-old child with spontaneous thrombosis of the intracranial portion of the left internal carotid artery.

Following are reports of two children with complete occlusion of the middle cerebral artery which was demonstrated by carotid angiography.

REPORTS OF CASES

Case 1. On May 14, 1951, a right-handed white boy almost six years of age had an episode of incoherent speech, fecal incontinence and left hemiparesis, which disappeared in 15 to 20 minutes. Two days later a transitory period of confusion and

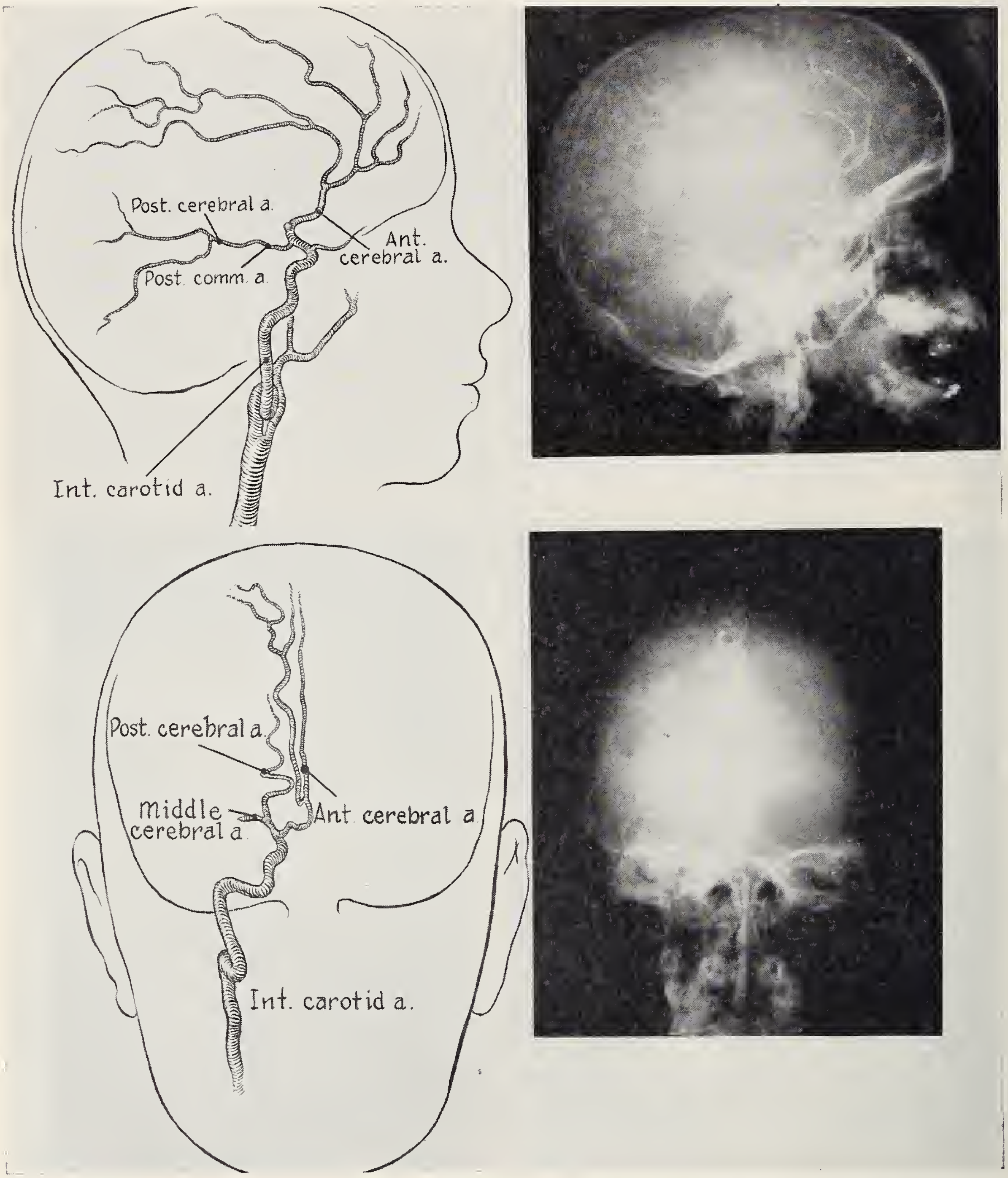

Figure 2 (Case 1).—Lateral carotid and antero-posterior carotid arteriograms with artist's drawings to emphasize the cerebral arteries. The right middle cerebral artery is occluded near its origin.

lassitude occurred. When the child was seen in the clinic on May 18, 1951, complete neurologic examination was within normal limits. An electroencephalogram was reported to show generalized dysrhythmia of nonspecific type with a suggestion of localized abnormality in the left temporal region. No abnormalities were seen in roentgenograms of the skull. While awaiting admittance to hospital, anticonvulsant medication was started on the assumption that the episode had been a convulsive seizure. However, 11 episodes of left-sided paralysis occurred before the patient was put in hospital some two weeks after the first attack. The severity of the attacks varied; during the most severe one, complete leftsided paralysis lasted for eight hours. In addition, a progressive personality change occurred and the child became irritable, aggressive and restless.

Birth and development had been normal. At the age of three years the child had an illness characterized by sore throat, polyarthritis and intermittent fever for several weeks. Complete details of this illness were not available but it was thought to have been acute rheumatic fever. A physician had noted a heart murmur for several months after this illness. The child's kindergarten teacher thought that his motor coordination was slightly below normal.

When admitted to the hospital on June 1, 1951, the child seemed alert and cooperative. The cardiac rate was regular and there was a Grade II systolic murmur which was loudest at the apex. Slight left lower facial under-activity and mild hypoactivity of the reflexes in the left lower extremity were observed. An electroencephalogram was reported to show high potentials and irregularity in the temporal and postcentral regions on the right, high potentials in the right low frontal and occipital areas and relatively low potentials in the right precentral region. There was spiking in the right temporal and post-temporal areas.

There were positive reactions to Kolmer and Kahn tests for syphilis on June 4: on July 10 the result of a Kolmer test was negative.

On June 2, 1951, with the patient under general anesthesia a pneumoencephalogram was made. The spinal fluid was under normal pressure and contained 45 cells per cubic millimeter, of which 12 per cent were polymorphonuclear leukocytes and 88 per cent lymphocytes. The spinal fluid contained 19 mg. of protein, 705 mg. of chloride and 22 mg. of sugar per 100 cc. Spinal fluid serologic study was negative for syphilis and the colloidal gold curve was within normal limits. The right lateral ventricle was found to be slightly larger than left (Figure 1). Following the pneumoencephalogram there was persistent left hemiparesis with an extensor plantar response on the left.

On June 8, bilateral carotid angiography demonstrated complete occlusion of the right middle cerebral artery (Figure 2).

On June 13 a pediatric consultant noted a grade II systolic murmur in the pulmonic area and a grade I systolic murmur at the apex, without diastolic components. The heart was not enlarged and regular sinus rhythm was present. The history suggested rheumatic fever with some mitral valve involvement, although there was no indication of active rheumatic fever at this time. Psychometric examination did not indicate intellectual deterioration or impairment.

The patient was discharged June 15, 1951, with instructions to take 100 mg. of nicotinic acid three times daily.

He was seen periodically thereafter, and slow improvement in the left hemiparesis was noted. A psychometric examination in November, 1951, was reported as showing an intelligence quotient of 80, and some deficiency was noted in number concept and inability to make abstract comparisons on the Wechsler Children's scale.

In January, 1953, the patient still had moderate spastic left hemiparesis, with the left upper limb more involved than the lower, and a hemiparetic gait. The left plantar response was extensor.

A report in 1957 stated that his gait was "acceptable," but he still required a night splint and stretching exercises for a shortened heel cord. The left upper extremity was used very little.

Case 2. The patient was a four-year-old girl who was admitted to San Francisco General Hospital on March 14, 1959. Birth and development had been normal and she had been speaking in full sentences. About four weeks before admission, following a respiratory infection, she seemed irritable and had several temper tantrums, and two days before admission her gait appeared to be clumsy. During the night before admission, the patient fell from her bed several times but did not lose consciousness. In the morning she was unable to stand or speak, and when she attempted to swallow food it ran out of the right side of her mouth. Because of the history of falling from bed, the possibility of an intracranial hematoma was considered.

At hospital admission the child appeared to be aphasic and drowsy. There was right hemiparesis, right hemihypalgesia and apparent right homonymous visual field defect. Spinal fluid pressure and cell count were within normal limits. Carotid angiography demonstrated complete occlusion of the left middle cerebral artery (Figure 3).

Results of routine blood cell count, urinalysis and serological tests for syphilis were within normal limits.

There was gradual improvement in speech and in the strength of the right extremities. When examined four and a half months after the onset of hemiplegia, the patient walked well with a slightly hemiparetic gait. There was tightness of the right heel cord. She was speaking clearly.

DISCUSSION

The descriptions of intracranial arterial occlusions in childhood have been based, to a large extent, on pathological examination in fatal cases. Even in these studies, the site of occlusion is not always identified. although the area of infarction appears to correspond to the distribution of a specific cerebral vessel.[9]

The sudden onset of hemiplegia in a child with congenital heart disease requires little comment. Other causes of cerebral arterial occlusions in childhood include many of the severe infectious diseases,[2,5] infections involving the vessel wall,[1,2] dissecting aneurysm of a cerebral artery,[7] congenital syphilis,[2] and atherosclerosis.[5]

In the two cases reported here complete occlusion of the middle cerebral artery was demonstrated by

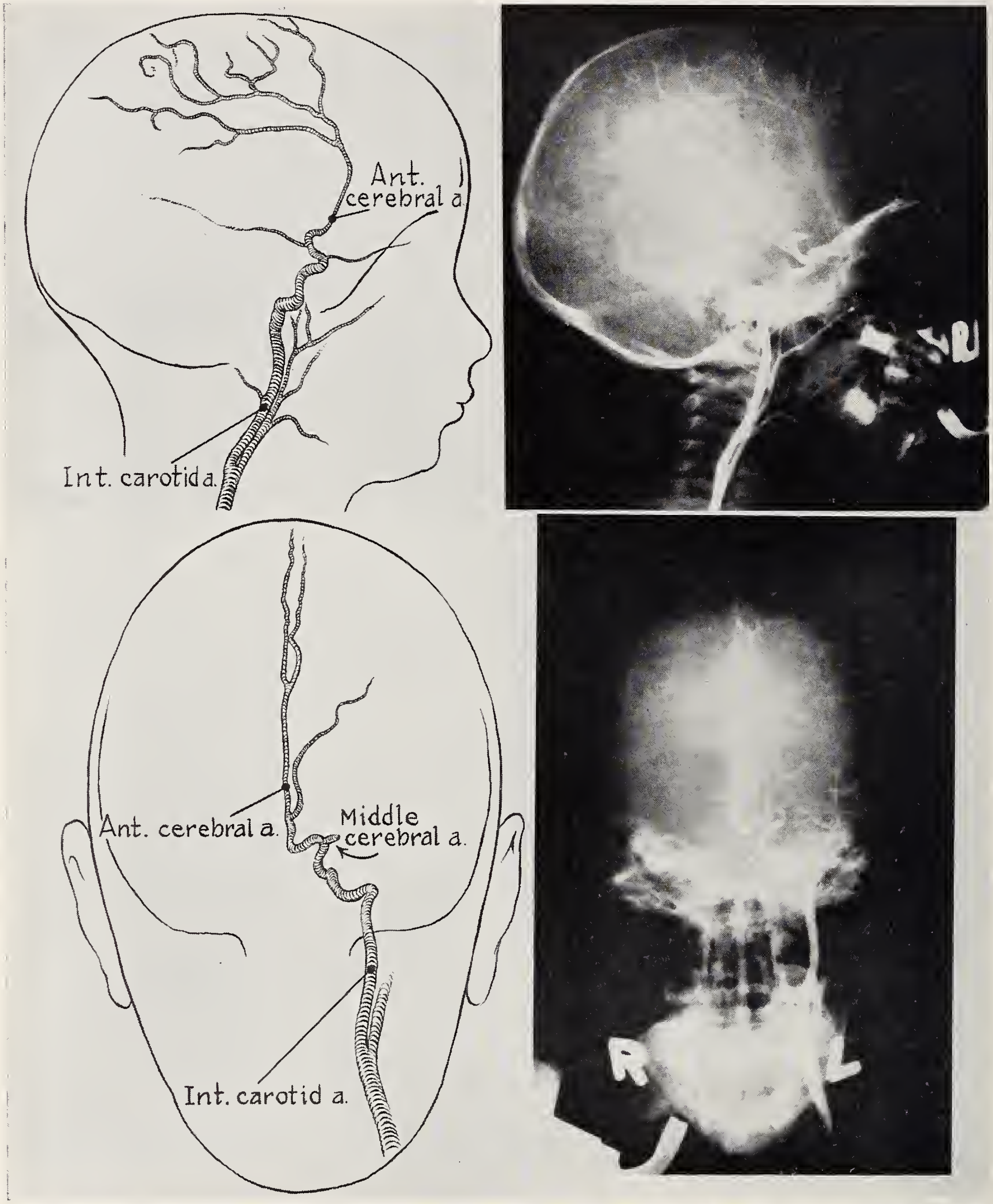

Figure 3 (Case 2).—Lateral and antero-posterior carotid arteriograms and artist's drawing. The left middle cerebral artery is occluded near its origin.

carotid angiography. In the absence of evidence of a primary source for an embolus, it is assumed that the occlusions were thrombotic in nature. In Case 1, the occlusion may have been related to rheumatic fever. In Case 2, there was no clinical evidence of any systemic disease.

The manner of onset of the symptoms in these two cases is noteworthy. In both instances premonitory signs were present for some time before the onset of permanent hemiparesis. In Case 1, the transient episodes of hemiparesis were at first interpreted as focal convulsive seizures with postconvulsive hemiparesis. This manner of onset is not unlike that seen in certain adult patients with occlusion of the internal carotid artery.[6] In Case 2, the premonitory signs were personality change and unsteadiness of gait.

From the evidence available in these cases, one cannot say whether the intermittent premonitory signs were due to gradual narrowing of the vessel before occlusion or to variations in collateral circulation after occlusion had been established. In Case 1, the relationship of onset of permanent hemiparesis to the pneumoencephalogram should be noted.

SUMMARY

In two children, aged six and four years, hemiplegia developed after several weeks of premonitory symptoms. The diagnosis of occlusion of the middle cerebral artery was established by carotid angiography. Neurological recovery was not complete in either case.

ADDENDUM: Taveras and Poser recently reported angiographic demonstration of occlusion of the middle cerebral artery in three children with infantile hemiplegia (Taveras, J. M., and Poser, C. M.: Roentgenological Aspects of Cerebral Angiography in Children, Amer. J. Roentgen., Rad. Therapy and Nuclear Med., 82:371-391, Sept. 1959).

Division of Neurological Surgery, University of California Medical Center, San Francisco 22 (Wise).

REFERENCES

1. Banker, B. Q.: Occlusive vascular disease affecting the central nervous system in infancy and childhood, Trans. Am. Neurol. Assoc., 84:38-44, 1959.
2. Courville, C. B.: Cerebral Palsy, San Lucas Press, Los Angeles, 1954, pp. 14, 26, and 37.
3. Duffy, P. E., Portnoy, B., Mauro, J., and Wehrle, P. F.: Acute infantile hemiplegia secondary to spontaneous carotid thrombosis, Neurol., 7:664-666, Sept. 1957.
4. Fisher, R. G., and Friedmann, K. R.: Carotid artery thrombosis in persons fifteen years of age or younger, J.A.M.A., 170:1918-1919, Aug. 15, 1959.
5. Ford, F. R.: Diseases of the Nervous System in Infancy, Childhood and Adolescence, C. C. Thomas, Springfield, Ill., 1960, 4th ed., pp. 880-886.
6. Johnson, H. C., and Walker, A. E.: The angiographic diagnosis of spontaneous thrombosis of the internal and common carotid arteries, J. Neurosurg., 8:631-659, Nov. 1951.
7. Norman, R. M., and Urich, H.: Dissecting aneurysm of the middle cerebral artery as a cause of acute infantile hemiplegia, J. Path. and Bact., 73:580-582, April 1957.
8. Stevens, H.: Carotid artery occlusion in childhood, Pediat., 23:699-709, April 1959.
9. Tyler, H. R., and Clark, D. B.: Cerebrovascular accidents in patients with congenital heart disease, A.M.A. Arch. Neurol and Psychiat., 77:483-489, May 1957.

Hydatid Cyst in Muscle of the Thigh

HARRY PERELMAN, M.D., and
LEON GOTTLIEB, M.D., Los Angeles

HYDATID DISEASE, also called echinococcosis or echinococciasis, is caused by the larval form of the tapeworm, *Taenia echinococcus granulosus*. The highest incidence is in sheep and cattle raising countries, particularly in Australia, Central Europe, New Zealand, Asia, Iceland and the countries bordering the Mediterranean. A few cases are reported each year from the southwestern areas of the United States.[5]

The disease is disseminated by the feces of infected canines. Dogs, foxes and wolves act as the definitive host. The intermediate hosts are usually sheep, hogs and cattle. The adult worm of *E. granulosus* is 3 to 5 mm. in length, and consists of a scolex, or head, with four suckers and a rostellum with two rows of hooklets. The scolex includes the head and narrow neck and is subtended by three proglottids.[1]

Human infestation results from ingesting contaminated food or water, or from finger pollution whereby eggs of the worms are introduced into the digestive tract. These eggs hatch in the small intestine, and the embryo burrows through the mucosa into the mesenteric venous system, whence it is carried to the liver by the portal circulation. The liver traps most of the larvae; those that escape go to the lungs, where they may settle. The larvae that are not filtered out by the lungs will pass to the left side of the heart and to the general circulation. Once in the general circulation, they may seed in any organ or tissue of the body.

When a final destination is reached by the embryo, it develops into a cystic form. The cyst grows at a slow rate; in some cases the cyst may be as old as the patient, infestation having taken place in infancy. Some cysts attain tremendous size; seven to ten liters of fluid have been reported in the larger ones.[4,6] In addition to fluid in the cyst cavity, there are found brood capsules, scolices and daughter cysts. The hydatid fluid appears to be clear, but if it is permitted to stand, a sediment containing scolices will settle to the bottom. This sediment is the so-called "hydatid sand."

Rupture of the cyst either by trauma or inadvertently by surgical puncture will allow the hydatid sand to escape into the tissues and there produce secondary cysts. The other hazard of leakage from a cyst is that of anaphylactic reaction in the host, the cyst fluid being antigenic.

About 70 per cent of human hydatid disease occurs in the liver. Ten per cent of lesions are found in the lungs.[4] Hydatid cysts rarely appear in peripheral sites—muscles and bones.

This study was aided by a grant from the Isaac Brotman Foundation of the Culver City Hospital.

From the Departments of Surgery and Medicine, Culver City Hospital, Culver City.

Submitted July 26, 1960.

The Casoni intradermal test as modified by Dew, Kellaway and Williams[2] and the complement fixation test of Ghedini[3] and Weinberg[7] may be of positive diagnostic help. However, deterrents to the tests are negligible amounts of antigen that may be absorbed from the cysts, and the scarcity of fresh antigen in this country.

The only successful treatment is complete excision. If excision is incomplete, the remaining cyst may continue to develop. Chemotherapy is entirely ineffective.

The unusual location of the cyst in the present case, the large dimensions and the characteristic tumefaction in a person from an endemic region prompted this report.

REPORT OF A CASE

A 61-year-old white man, a grocer, was admitted to the Culver City Hospital on February 22, 1957, with a large, hard, painless lump in the right upper thigh. The lump had been present for four to six months and was becoming larger. It was not tender and there was no pain in the area. The patient had no history of any severe illness. Born in Greece, he had served in the Greek army during World War I, then had come to the United States. On later questioning, he denied any contact with animals such as sheep or dogs.

Except for a large, firm mass in the right thigh, no abnormalities were noted on physical examination. The blood pressure was 110/70 mm. of mercury and the pulse was regular at 80 per minute. Respirations were 20 per minute. The temperature was 98.6° F. There was no generalized enlargement of lymph nodes. The abdomen was soft and no masses or organs were felt. The mass in the thigh was in the upper medial third. It seemed to extend deep to the fascia lata and was movable but not tender. There was no discoloration of the skin over it and no bruit was heard.

Results of a serologic test for syphilis were negative. Erythrocytes numbered 4.6 million per cu. mm. of blood and hemoglobin content was 14 gm. per 100 cc. Leukocytes numbered 8,750 per cu. mm.—75 per cent segmented forms, lymphocytes 22 per cent, monocytes 1 per cent and eosinophils 2 per cent. Results of urinalysis were within normal limits. Cephalin flocculation was negative. Alkaline phosphatase value was 2.2 units. In roentgenograms of the pelvis, lumbosacral spine and chest, no evidence was seen of metastasis to the examined areas.

The preoperative impression was of muscle sarcoma or liposarcoma. A longitudinal incision was made in the upper medial aspect of the right thigh, and on separation of the muscles in this area, an irregular mass of yellowish, semi-liquid, semi-firm tumor was seen, extending from the upper medial aspect of the thigh inferiorly and posteriorly behind the femur. The tumor was approximately 15 to 20 cm. in width and depth and varied from 6 to 8 cm. in thickness (Figure 1). The tumor mass was wound about the medial aspect of the thigh in such a manner as to extend from the antero-medial aspect inferiorly and posteriorly behind the femur and between the deep adductor muscles and the vastus medialis. It was removed by blunt and sharp dissection in the entire involved area. The wound was closed without placement of drains.

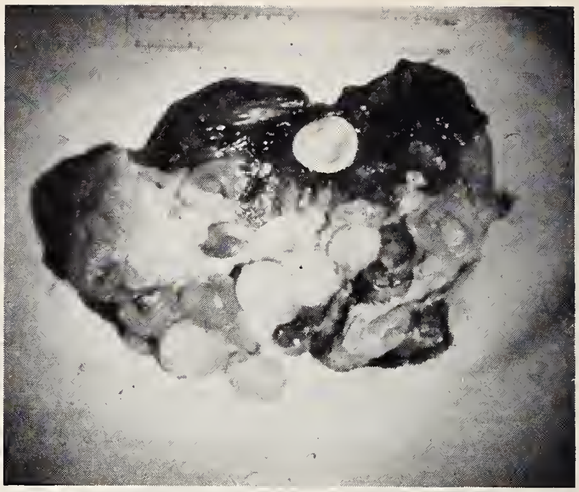

Figure 1.—Gross specimen, echinococcal cyst excised from thigh.

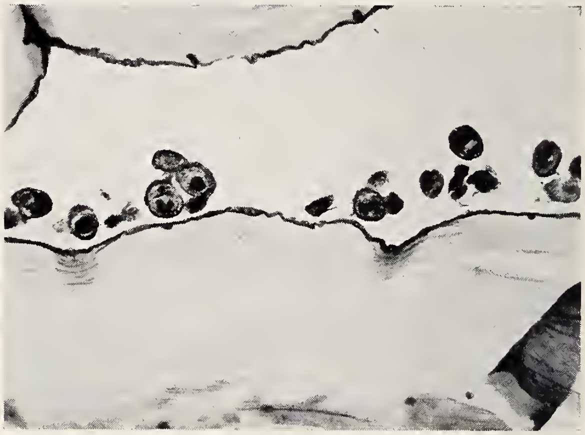

Figure 2.—Photomicrograph showing the cyst wall and echinococcus scolices (×160).

Pathologist's Report

The pathologist reported: The specimen was an ovoid mass, 16x12x7 cm., consisting of a fibrous sheath enclosing multiple cystic structures in necrotic fat. When the mass was incised, large numbers of soft, thin-walled, white cysts extruded. They lay in a stroma of fatty tissue, with yellowish chalky discoloration, suggesting fat necrosis. The cysts ranged in size from 1 to 3 cm. They contained clear but mucoid fluid and showed very tiny vegetations on the inner surfaces. Microscopically the cyst walls were seen as hyaline tissue, almost devoid of cells and forming anastomosing strands typical of the lesion. Some of the sections showed attached scolices of Echinococcus. The peripheral capsular tissue in which some muscle fibers were attached showed chronic inflammation of mild degree, with a lymphocytic infiltrate. The diagnosis was multiple echinococcal cysts in muscle. (See Figure 2.)

The patient was discharged from the hospital five days after operation. He was examined occasionally in the ensuing three years and no evidence of recurrences was noted.

SUMMARY

Hydatid cyst (Echinococcosis) occurring in muscle is rare. Human hydatid infestation results from ingesting the hydatid eggs which subsequently hatch in the intestine and are finally carried to the liver by the portal circulation. Although the liver traps most of the larvae, those that escape settle in the lung, but some which are not filtered out in the lung will pass into the general circulation and seed in other tissue of the body.

The only successful treatment is complete excision, which was done in the case, reported herein, of an extraordinarily large cyst in an unusual location.

6010 Wilshire Blvd., Los Angeles 36 (Perelman).

REFERENCES

1. Birch, C. L., and Anast, B. P.: Hydatid disease, J. Am. M. Women's A., 14:885-895, Oct. 1959.
2. Dew, H. R., Kellaway, C. H., and Williams, F. E.: The intradermal reaction in hydatid disease and its clinical value, M. J. Australia, 1:471-478, May 1925.
3. Ghedini, G.: Gazz. Osp. Clin., 27:166, 1906.
4. Goldstein, H. H., Lieberman, M. L., and Obester, G. E.: Echinococcic disease of the kidney, J. Urol., 81:596-601, May 1959.
5. Harrison, T. R., et al.: Principles of Internal Medicine, p. 1183, New York, 1954, McGraw-Hill Book Co.
6. Jidejian, Y.: Collective review of hydatid disease, J. Internat. Coll. Surg., 28:125-133, Aug. 1957.
7. Weinberg, M.: Ann. Inst. Pasteur, 23:472, 1909.

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EDITORIAL

Legislative Time Again

IMMEDIATELY after the January 1 holiday the Legislature of the State of California went into session.

The session in this, an odd-numbered year, is wide open for the introduction of any kind of proposal the members of the Legislature may wish to advance. In the even-numbered years the state lawmakers consider only a budget and such specific matters as may be taken up in a special session called by the Governor.

If the pattern of past years is repeated now, we may expect to see some 6,000 bills introduced before the Assembly and the Senate. Of these, around 10 per cent, or about 600 measures, will have some direct or indirect bearing on the practice of medicine or the public health.

And if the precedent of earlier years is repeated, these bills will cover a wide variety of topics, will encompass both scientific and economic matters and will cause a large number of eyebrows to be raised in the medical and allied professions.

At this moment, one can only guess at the content of the many legislative proposals which are certain to be put into the hopper. Some members of the Legislature and some special interest groups, such as labor, have already made public announcements on the bills they intend to have introduced. Others have been more reticent, publicly, and will bring in their proposals without fanfare.

Specifically, labor has announced its intention of reviving the 1945 proposal of then Governor Earl Warren for the establishment of a state plan of medical care. Socialized medicine, it was called by physicians: not so, said the Governor, labor and other supporters of the plan.

The difference in definitions of "socialized medicine" was resolved in committee in the Assembly, when the Governor's plan failed to gain committee approval and just barely fell short of being brought out of committee onto the floor of the Assembly for debate.

For the record, it should be noted that the Governor tried again in 1947, and again in 1949, but his repeat efforts failed completely and without any of the furor which attended the 1945 trial.

Now, 16 years after the first try, labor says it will try again. If its efforts are in any measure successful, medicine will again be in for a fight, basing its resistance as it did before on the proposition that the socialization of medicine is simply a step in the socialization of all services and goods.

These observations are mainly academic at the moment, for the reason that labor's bill to socialize medicine has been introduced so recently that copies are not yet available for review and analysis.

A number of other bills have been announced publicly by their authors but have not yet been officially introduced. Here again, reliance cannot be placed on the public announcement; the bill itself, when and if introduced, is the item with which we have to deal.

As a result of publicity which legislators and others have received from public statements about what they say they *intend* to do, physicians in many parts of the state already are expressing concern over the potential harm to medical practice if some of the publicized proposals (not yet introduced as bills) should at last be submitted to the Legislature and adopted.

Policy in the California Medical Association has consistently been to refrain from any hurried conclusions or statements on legislation until (1) the bill has been introduced, (2) an opportunity is had to analyze it legally and for its effect, and (3) a position is taken on the measure by the Council.

This attitude is dictated by several sound considerations. In the first place, a public announcement of proposed legislation may represent nothing more than a trial balloon designed to find out who might be supporters and who opponents. Secondly, a public statement about proposed legislation may not reflect accurately on the measure as it is actually introduced. Thirdly, a quick stand announced on any legislation may provide the author with a chance to compromise with announced opponents on minor matters in such a way that he can later claim to have consulted with critics of his proposal and to have revised his measure to meet their objections.

The California Medical Association has followed the legislative processes carefully for a number of years and has found that effective legislative activities require an active committee of members of the Association who can keep in touch with happenings in the Capitol, backed up by legal counsel versed in legislative draftsmanship and by representatives who can carry out the policy decisions reached by the Council on any given measure.

With this sort of representation, the Association is able to secure copies of measures placed before the Legislature, have them analyzed, secure a policy position from the Council and proceed to implement that policy.

Thus, in the present session of the Legislature, the watchword at this time must be "wait and see." Wait for the bill to be introduced; see what is in it and what effect it may have on the public health or on the practice of medicine.

Under this policy the Association will bide its time until the established procedures may be undergone. In legislation, as in so many other fields, timing is extremely important and hasty actions or decisions may well drain strength from the organization in advance of the real need for strength.

Obviously, the present legislative session will produce a number of proposals that will be considered inimical to the best medical interests of the public. Obviously, the California Medical Association will oppose all such measures.

It is fortunate that under the present rules of the Legislature, no action can be taken on any bill until 30 days has elapsed after its introduction, except for rare emergencies. This waiting period allows those interested in legislation to review and analyze each measure and determine what position to take on it. The Association will, of course, support those bills which appear good and oppose those seeming bad. The decision as to which category a measure fits can be made during the 30-day waiting period before even committee consideration can be given to any measure.

With health matters representing so large a segment of the total legislative effort in California, the proper and adequate representation of the medical profession and its allies is valuable beyond description. Such representation the C.M.A. now has and has had for some years.

Physicians who may become disturbed over headlines at this stage of the legislative meeting would be well advised to consider the procedures which the Association has found so useful over the years and which have proved their effectiveness.

In short, let's wait and see.

Letters to the Editor...

A FEW MONTHS AGO at a public riding stable in Los Angeles a man who probably did odd jobs for the stable owners gave a good swat to the rump of a sluggish horse. The horse was carrying an experienced hospital secretary who was an inexperienced horsewoman. The horse got the idea and set off on a fast trot. The rider soon fell off, landing solidly on her bottom. She wound up in the hospital in traction with diagnoses of back sprain and multiple bruises. When various staff doctors stopped in to see her, they asked how the accident happened. The next remark of each doctor, the secretary avows, was: "You're going to sue, aren't you?" Suit before sympathy. Now probably the girl has grounds for legal action, but my point is that the doctors should not have had pecuniary compensation as their first thought.

Too many doctors similarly want to magnify the injuries in automobile accidents to help the patient, his lawyer, and his doctors to get more money. The doctor, however, should think more of getting the patient well and quickly well, adding the appropriate admixture of encouragement and reassurance to his medical regimen.

There is a special reason for this cost conscious handling of even insurance cases that deserves repetition: This is the fact that it is the good and the innocent people who pay for the insurance awards. By the good and the innocent I am thinking especially of that segment of the public whom we doctors cherish as patients: our stable, middle income families who are not accident prone, who are careful, productive, conscientious citizens. They pay our bills cheerfully, and they have to pay all insurance costs directly or indirectly. The insurance companies by and large insure for themselves profits and growth by appropriate premiums. But the innocent public pays. Let us doctors do what we can to protect it and help it.

ARTHUR F. GREENWALD, M.D.

Los Angeles.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 464th Meeting of the Council, San Francisco, Hilton Inn, December 10-11, 1960.

The meeting was called to order by Chairman Sherman in the Hilton Inn, San Francisco International Airport, on Saturday, December 10, 1960, at 9:30 a.m.

Roll Call:

Present were President Foster, President-Elect Bostick, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, O'Connor, Shaw, Rogers, Dalton, Murray, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Edwards, Tobitt and Drs. Batchelder and Miller of C.M.A. staff; county executives Scheuber of Alameda-Contra Costa, Geisert of Kern, Field of Los Angeles, Grove of Monterey, Somerville of Napa, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Nute of San Diego, Neick of San Francisco, Thompson, Pearce and Monnich of San Joaquin, Wood of San Mateo, Lingerfelt of Fresno, Donovan and Colvin of Santa Clara, Funk of Solano, Bailey of Tulare, Brown of Sonoma; Dr. Malcolm Merrill, State Director of Public Health; Dr. Theo K. Miller, representing the State Director of Mental Hygiene; Mrs. Eunice Evans, State Department of Social Welfare; Messrs. Hassard and Huber of legal counsel; Messrs. Read, Salisbury and Fraser of the Public Health League; Dr. Robert Holmes, president of San Mateo County Medical Society; Dr. William Hickey, president-elect of Sacramento Medical Society; Messrs. Lyon, Niron and Paolini of California Physicians' Service; and Doctors Dan O. Kilroy, Donald Harrington, Francis E. West, Wayne Pollock and Bernard M. Kramer.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 463rd meeting of the Council, held October 22, 1960, were approved.

2. *Membership:*

(a) A report of membership as of December 8, 1960, was received and ordered filed.

(b) On motion duly made and seconded, 30 delinquent members whose dues have now been paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 14 applicants were voted Associate Membership. These were: Charles J. Brooks, Harvey Robert Lerner, Jack Lieberman, Fred H. Mowrey, Stanley John Simon, Ethel Francis Young, Llewellyn Martin Jones, Los Angeles County; Daniel Allen Treat, Sacramento County; George J. Wiesseman, San Bernardino County; Lourdes O. Agcaoili, Seymour Fisher, San Francisco County; Isaac Persyko, San Joaquin County; Frederick P. Schnell, San Luis Obispo County; Donald M. Bramwell, Sonoma County.

(d) On motion duly made and seconded in each instance, five members were voted Retired Membership. These were: Jose Renato Lacayo, C. Morley Sellery, Reuel M. Spencer, Los Angeles County;

PAUL D. FOSTER, M.D.	President
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George M. Landrock, Marin County; B. J. Rohlfes, San Francisco County.

(e) On motion duly made and seconded in each instance, five members were voted a reduction of dues because of illness or postgraduate study.

3. *State Department of Public Health:*

Dr. Malcolm Merrill, State Director of Public Health, reported that additional funds were contemplated for the department's use in the field of alcoholic rehabilitation. He also reported that progress was being made in automotive exhaust control and that several departments of the state were conferring on a possible coordinated program of traffic safety.

4. *State Department of Mental Hygiene:*

Dr. Theo K. Miller reported that two units for concentrated mental health therapy are soon to be opened, one at University of California at Los Angeles and one at the Napa State Hospital.

5. *State Department of Social Welfare:*

Mrs. Eunice Evans, Assistant Director of the State Department of Social Welfare, reported that a survey of retail drug prices showed that the department is purchasing prescription drugs for its recipients at a cost somewhat less than is paid by the general public.

Mrs. Evans also reported that eight private and public rehabilitation centers had been approved, that additional centers would likely qualify for approval in the near future and that the rehabilitation program for the aged would start on January 1. She also reported that the health evaluation studies of the aged would start on February 1.

6. *Unfinished Business:*

(a) Dr. Sherman reported for the ad hoc committee to study the report of the Governor's Committee for Medical Aid and Health. This report to date is in outline form, in advance of the complete report. On motion duly made and seconded, it was voted to accept the ad hoc committee's report as a progress report.

(b) Dr. Todd reported that the committee to plan the 1961 Conference of County Society Officers had voted to recommend that the conference be scheduled for February 10 and 11 and that the president, president-elect and secretary and two members of the House of Delegates be invited from each society, their expenses to be met by the Association. On motion duly made and seconded, this recommendation was approved.

Dr. Harrington reported that the Commission on Medical Services also wished to invite two representatives of each society to attend this conference at the Commission's expense. On motion duly made and seconded, this proposal was approved. It was also agreed that representatives of other organizations might be invited as individuals but not as groups.

7. *California Physicians' Service:*

Dr. John G. Morrison, chairman of the board of California Physicians' Service, reported that there are now 14,462 physician members and that the organization's financial status is satisfactory. He also reported that progress is being made on studies covering payments for consultative services and podiatrists' services.

Dr. Morrison also discussed the MD-65 program of C.P.S. and suggested that the program be expanded, possibly to include major hospitalization coverage with a $500 deductible clause and a $5,000 maximum benefit. On motion duly made and seconded, it was voted to reactivate the Council's committee on MD-65, possibly with new members. This committee is to be named by the Chairman of the Council and the Chairman of the Committee on Committees and is to present a report at the next Council meeting.

8. *Report of the President:*

Dr. Foster reported on actions taken by the Committee for Emergency Action at a meeting held November 23, 1960. Principal item at the meeting was passage of a resolution urging the American Medical Association to assume leadership in investigating the feasibility of providing broad-scale health insurance coverage for all people under a voluntary program. On motion duly made and seconded, this report was approved.

9. *Report of the President-Elect:*

Dr. Bostick reported on the reactions he had received on some of his visits to county societies and urged that members of the Council work with their constituents for achieving an understanding that a public relations program was a most involved problem and that professional understanding of the goals of the profession was essential in this regard.

10. *Finance Committee:*

Chairman Heron reported for the Finance Committee on several items, as follows:

(a) The committee recommended against preparation of a mailing list using home addresses of members, because of the difficulties and cost involved. On motion duly made and seconded, this recommendation was approved.

(b) The committee recommended that the expenses of representatives to the Governor's Conference on the Aging be paid where such representatives had been nominated by the Association but that the expenses of others not be met. On motion duly made and seconded, this recommendation was approved.

(c) On motion duly made and seconded, the committee's recommendation that four official representatives of the Association to the White House Conference on the Aging be reimbursed for their expenses was approved.

(d) On the committee's recommendation and on motion duly made and seconded, it was voted to approve the formation and operation of a publishing subsidiary for the distribution of pamphlets and other printed materials. The corporation, to be known as Six Ninety Three Sutter Publications, Inc., will be wholly owned by Trustees of the California Medical Association. On motion duly made and seconded, interfund transactions between this corporation and the Association were approved.

(e) On motion duly made and seconded, it was voted to reaffirm an earlier Council decision calling for the payment of a per diem to a specified committee chairman only for those days when the chairman was absent from his office because of an approved request from a component county society.

(f) On motion duly made and seconded and by a three-fourths recorded vote, it was voted to appropriate an additional $4,000 to cover the expenses of the 1961 Conference of County Society officers, to be held February 10-11, 1961.

(g) On motion duly made and seconded, it was voted to approve in principle the committee's recommendation that a program of retirement annuities and life insurance be instituted for the employees of the Association, utilizing group coverages for both parts of the program. The Finance Committee was directed to work out necessary details.

(h) It was reported that a study of the Association's finances revealed that to avoid the current borrowing of money each fall to meet current obligations the sum of $25 a member, as a one-time assessment, would be necessary.

11. *Committee on Committees:*

Dr. Bostick recommended for the Committee on Committees that Dr. John F. Murray be added to the Liaison Committee to the California Pharmaceutical Association and that Dr. Donald Pettit be added to the Committee on Scientific Work to succeed Dr. Thomas H. Brem, resigned. On motion duly made and seconded these appointments were approved.

12. *Project "Hope":*

Dr. Bernard M. Kramer of San Francisco, just returned from a month of service on the ship *Hope*, reported on his experiences and on the program being followed by the project in Eastern countries which have requested the project's services. On motion duly made and seconded, it was voted that the Council of the California Medical Association views with favor the activity of the ship *Hope* as a highly meritorious program of people-to-people medical care between the United States and other countries.

13. *Liaison Committee to the State Bar of California:*

A report from the Liaison Committee to the State Bar of California recommended that limited privileges should be accorded members of medical disciplinary committees in the exercise of their duties and that Mr. Hassard be instructed to draft suitable legislation for the approval of the State Bar and for introduction into the Legislature. On motion duly made and seconded, this recommendation was approved.

14. *Commission on Medical Services:*

(a) Several recommendations for the operations and procedures of mediation committees in the county societies were discussed and, on motion duly made and seconded, referred back to the Commission for further clarification and report.

(b) Recommendations of the Commission relative to the August 19, 1960, report of the Commission—C.P.S. Liaison Committee were disapproved on motion duly made and seconded, and the Liaison Committee report of August 19 was approved.

(The Commission on Medical Services report recommended referral of House of Delegates resolutions No. 57, No. 75 and No. 76 to the Committee on Fees and the C.P.S. Fee Schedule Committee, to jointly develop premiums, information on number of people to be covered, etc. By approval of the C.M.S.–C.P.S. Liaison Committee report, the Council authorized C.P.S. to study the feasibility of providing new programs with varying income ceilings and fee schedules. The Liaison Committee also recommended disapproval of House of Delegates resolution No. 13 on the basis that the inequities in the A Schedule would be compounded, not eliminated as the House of Delegates resolution suggested.)

(c) The Commission recommended that the Bureau of Research and Planning make a comprehensive study of medical society-sponsored programs in California and information from such study be made available to the membership. On motion duly made and seconded, this recommendation was approved.

15. *Committee on Other Professions:*

Dr. Wayne Pollock, chairman of the Committee on Other Professions, reported on continuing discussions with a committee of the California Osteopathic Association. On motion duly made and seconded, it was voted to approve formation of a joint educational committee of the two associations, to be composed of the deans of the three Southern California medical schools and Dr. Pollock representing the Association and Doctors Bell, Carroll and Grunigen representing the California Osteopathic Association.

On motion duly made and seconded, it was voted to approve a letter to be sent by President Foster to President Dorothy Marsh of the California Osteopathic Association and a press release prepared and to be issued jointly by the two associations. It was also agreed that a letter be sent to the membership, advising them of the history and current status of these discussions.

16. *Committee on Legislation:*

Dr. Kilroy and Mr. Read reported on the results of the 1960 elections and stated that a record number of legislative proposals was anticipated in the 1961 legislative session, many of them emanating from sources which may be inimical to medicine.

17. *Liaison Committee to State Department of Social Welfare:*

Chairman Quinn of the Liaison Committee to the State Department of Social Welfare reported on a meeting held with the department, several phases of which had been covered earlier by Mrs. Evans of the department. On motion duly made and seconded, it was voted to accept this report.

18. *Commission on Public Agencies:*

Chairman Wheeler of the Commission on Public Agencies presented a request from Senator Byrne for nomination of a representative to serve on a Citizens' Advisory Committee on Predators and Rabies. On motion duly made and seconded, it was voted to approve this request, the Committee on Committees to name the representative.

19. *Commission on Community Health Services:*

(a) Chairman MacLaggan discussed proposals which have been given to the Governor for improved medical and environmental care of migratory farm workers. It was agreed that legislative proposals along this line be carefully studied.

(b) A request of the Section on Industrial Health to change its name to Section on Occupational Health was, on motion duly made and seconded, referred to the Committee on Committees for study and recommendation.

(c) A proposed letter to the Joint Commission on Education, urging the maintenance of a program of health education in the schools was approved.

(d) Jack Collins reported on the Governor's Conference on Traffic Safety, in which the Committee on Traffic Safety participated. The committee also recommended that traffic safety committees be established in the county societies, these committees to work with the Department of Motor Vehicles locally and to make recommendations on individual cases referred by that agency. On motion duly made and seconded, it was voted to approve this recommendation and to refer any proposed legislation to the Committee on Legislation.

20. *Liaison Committee to California Hospital Association:*

Dr. MacLaggan reported that the program for hospital-physician relationships would be functioning in four counties next month and that additional hospitals were being contacted to inaugurate the program. He also reported that the Crippled Children's Services of the State Department of Public Health had approved the hospital-physician principles for recognition of hospitals under its program.

21. *Commission on Cancer:*

Report was made on the proposed revision and updating the "Cancer Studies" produced and published by the Commission several years ago. Further report will be made later.

22. *Reorganization of State Government:*

Councilor Anderson called attention to the report of the Committee on Reorganization of the State Government and pointed out that some sections have a bearing on medical practice. It was regularly moved, seconded and voted to request the Committee on Legislation to review such sections and recommend appropriate action.

Recess:

At this point the Council was declared in recess until Sunday, December 11, 1960, at 8:00 a.m.

Reconvention:

The Council was reconvened at 8:00 a.m., Sunday, December 11, 1960, for a general discussion of various problems confronting the medical profession today.

23. *Governor's Committee on Medical Aid and Health:*

Doctors Paul D. Foster and T. Eric Reynolds, members of the Governor's Committee on Medical Aid and Health, reported on the progress of the committee and on its forthcoming report. It was pointed out that within the next 15 years the state will have need for 1,400 medical graduates annually from its own schools, or approximately three times the present number.

Dr. Francis E. West made a complete report on the functions and operations of the State Board of Medical Examiners. Councilor Quinn, a member of that Board for 12 years, supplemented this report.

On motion duly made and seconded, it was voted to include in the approved report of the ad hoc committee to study the report of the Governor's Committee on Medical Aid and Health a section pointing out that all physicians and the Association are greatly concerned with the need for the licensing authority to exercise some degree of continuing supervision over standards of care.

24. *Foundations for Medical Care:*

Discussion was held on the operations and the position of several foundations for medical care which have been sponsored by county societies in recent years. On motion duly made and seconded, it was voted to refer to the appropriate committee or committees a study of the present and the potentially desirable spheres of activity of various types of underwriters and mechanisms in voluntary health insurance.

25. *Commission on Medical Service—C.P.S. Liaison Committee:*

Discussion was held on the effectiveness of the Commission on Medical Services–C.P.S. Liaison Committee and the question was propounded that this committee might more effectively operate as a direct committee of the Council rather than through a commission. On motion duly made and seconded, it was voted to refer this question to the Committee on Committees for study and report back to the Council at the earliest possible opportunity.

26. *Fees for State Medical Care Programs:*

Discussion was held on possible means of achieving uniform and adequate fees for medical services provided under several programs financed by the State of California. Variations in fee levels in different areas of the state were demonstrated. On motion duly made and seconded, it was voted that state officials be requested to achieve uniform and adequate medical care fees on the basis of allocation of fees by regions through utilization of a composite premium structure under a pooled fund program.

27. *Ad Hoc Committee on History of C.M.A.:*

Councilor Rogers presented a progress report for the ad hoc Committee on History of the C.M.A., pointing out that no author is known to be engaged in preparing such a history at this time but that considerable material is available for such a project. On motion duly made and seconded, it was voted to approve the committee's recommendation that a bibliography of available historical material be sent to each county society, to medical schools and other interested parties.

28. *C.M.A. Mailing List:*

A request for use of the Association's mailing list was presented and, on motion duly made and seconded, was denied.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 3:15 p.m.

Samuel R. Sherman, M.D., *Chairman*
Matthew N. Hosmer, M.D., *Secretary*

In Memoriam

Arklin, Virgil P. Died in Sun Valley, December 23, 1960, aged 38. Graduate of the University of Southern California School of Medicine, Los Angeles, 1947. Licensed in California in 1947. Doctor Arklin was a member of the Los Angeles County Medical Association.

✣

Davies, Thomas F. Died in 1960, aged 84. Graduate of New York Medical College Flower and Fifth Avenue Hospitals, New York, N. Y., 1898. Licensed in California in 1928. Doctor Davies was a member of the Alameda-Contra Costa Medical Association.

✣

Ellis, Lula Talbott. Died in Duarte, December 27, 1960, aged 94. Graduate of University of Southern California School of Medicine, Los Angeles, 1888. Licensed in California in 1889. Doctor Ellis was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Fishman, Louis Zolo. Died in Walnut Creek, December 17, 1960, aged 56. Graduate of the University of Illinois College of Medicine, Chicago, 1928. Licensed in California in 1943. Doctor Fishman was a member of the Alameda-Contra Costa Medical Association.

✣

Freedman, Eugene. Died in Los Angeles, December 26, 1960, aged 63. Graduate of the Universitatea Regele Ferdinand I-lu din Cluj Facultatea de Medicina si Farmacie, Rumania, 1920. Licensed in California in 1945. Doctor Freedman was a member of the Los Angeles County Medical Association.

✤

Hillyer, Ernest C. Died in Sherman Oaks, December 28, 1960, aged 58. Graduate of the University of Colorado School of Medicine, Denver, 1932. Licensed in California in 1938. Doctor Hillyer was a member of the Los Angeles County Medical Association.

✤

Holmes, Arthur J. Died in Pasadena, December 30, 1960, aged 60. Graduate of Baylor University College of Medicine, Houston, Texas, 1925. Licensed in California in 1927. Doctor Holmes was a member of the Los Angeles County Medical Association.

✤

Horner, Merle Meyers. Died December 17, 1960, aged 48. Graduate of George Washington University School of Medicine, Washington, D. C., 1941. Licensed in California in 1950. Doctor Horner was a member of the Los Angeles County Medical Association.

✤

King, Norris Curtis. Died in Elsinore, December 29, 1960, aged 66. Graduate of Meharry Medical College, Nashville, Tennessee, 1924. Licensed in California in 1927. Doctor King was a member of the Los Angeles County Medical Association.

✤

Lucas, William Palmer. Died in Oakland, December 16, 1960, aged 80. Graduate of the Western Reserve University School of Medicine, Cleveland, Ohio, 1905. Licensed in California in 1913. Doctor Lucas was a member of the San Francisco Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✤

Northway, William Herrick. Died in Palo Alto, December 23, 1960, aged 57. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1930. Licensed in California in 1930. Doctor Northway was a member of the Santa Clara County Medical Society.

✤

Peterson, Herbert G., Jr. Died December 5, 1960, aged 38. Graduate of Harvard Medical School, Boston, Massachusetts, 1948. Licensed in California in 1956. Doctor Peterson was a member of the Los Angeles County Medical Association.

✤

Sisson, Charles E. Died in Hollywood, December 26, 1960, aged 87. Graduate of the University of Illinois College of Medicine, Chicago, 1899. Licensed in California in 1915. Doctor Sisson was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Weitkamp, Alfred H. Died December 14, 1960, aged 78. Graduate of the Denver College of Physicians and Surgeons, Colorado, 1909. Licensed in California in 1916. Doctor Weitkamp was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

Keep on TALKING

And LISTENING

And EAT, *too*

at the

SECOND GENERAL MEETING

MONDAY MORNING, MAY 1

Symposium on
Newer Diagnostic Methods of
Gastroenterology

The panel will consist of so many outstanding discussants that . . . . the question and answer period will carry over into the lunch hour . . . . so . . . . arrangements have been made for a

Special Luncheon

at which members of the audience who wish to may stay for a continued Question and Answer Period.

PRICE:
four dollars and six cents each

No tickets will be sold after April 25, 1961

USE COUPON BELOW FOR ORDERING TICKETS—
MAKE CHECKS PAYABLE TO AMBASSADOR HOTEL

Mr. R. G. Bowman
Annual Session Coordinator
California Medical Association
693 Sutter Street
San Francisco 2, California

YES, I want to attend the luncheon of the General Meeting. Attached is my check for $.................
(\$4.06 each)

Please send me.....................tickets.

...., M.D.

....
ADDRESS

....
CITY

California Medical Association

1961

For complete program
see March issue

Annual Session

AMBASSADOR HOTEL • LOS ANGELES

APRIL 30 to MAY 3

- Five Outstanding Guest Speakers
- General Scientific Meetings
- Specialty Scientific Meetings
- Postgraduate Courses
- Medical Motion Picture Symposia
- Technical Exhibits • Scientific Exhibits
- Presidents' Dinner Dance
  Sunday, April 30 • Cocoanut Grove
- House of Delegates
  Opening Session Saturday, 2:00 p.m., April 29
  Sunday, April 30, Tuesday Afternoon, May 2, and Wednesday, May 3
- Registration Daily
  8:30 a.m. to 5:00 p.m. . . . No Registration Fee

PLEASE MAKE HOTEL ROOM RESERVATIONS ONLY THROUGH C.M.A. OFFICE IN SAN FRANCISCO. USE RESERVATION REQUEST FORM ON PAGE 115.

C.M.A. ANNUAL MEETING—1961 SCIENTIFIC SESSIONS

LOCATION	SUNDAY APRIL 30		MONDAY MAY 1		TUESDAY MAY 2		WEDNESDAY MAY 3	
AMBASSADOR HOTEL (Lobby Floor)	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Embassy Room	**9:30 a.m.**[†] **House of Delegates** [†]See note below for Opening Session	**2 p.m.** General Meeting Inflammatory Diseases of the Colon	**9 a.m.** General Meeting Diagnostic Methods of Gastroenterology		**9 a.m.** General Meeting Five Guests Five Topics	**4:00 p.m.** **House of Delegates**	**9:30 a.m.** **House of Delegates**	
West Venetian Room	**9 a.m.** Internal Medicine	**2 p.m. & 8 p.m.** Film Symposium	**9 a.m.** Film Symposium	**2 p.m. & 8 p.m.** Film Symposia	**9 a.m.** Film Symposium	**2 p.m. & 8 p.m.** Film Symposia	**9 a.m.** Film Symposium	**2 p.m.** Film Symposium
East Venetian Room	**9 a.m.** Pathology					**2 p.m.** Industrial Medicine Physical Medicine General Practice		**2 p.m.** Public Health
Regency Room	**9 a.m.** Obstetrics and Gynecology	**2 p.m.** Eye Anesthesiology		**2 p.m.** Anesthesiology		**2 p.m.** Obstetrics and Gynecology Anesthesiology	**9 a.m.** Neurology	**2 p.m.** Psychiatry
Grove Lounge	**9 a.m.** Dermatology	**2 p.m.** Ear, Nose, Throat					**9 a.m.** Urology	**2 p.m.** Urology
Lido Room	**9 a.m.** Radiology	**2 p.m.** Radiology			**9 a.m.** Physical Medicine			**2 p.m.** Internal Medicine
Colonial Room	**9 a.m.** General Surgery					**2 p.m.** Disaster Medical Care		
Rose Room	**9 a.m.** Orthopedics							
(Casino Floor) Oval Room A	**9 a.m.** Allergy	**12:30 p.m.** Allergy Luncheon and Business Meeting						**2 p.m.** Pediatrics
WHITE MEMORIAL HOSPITAL	**9 a.m.*** **(Bus at 8 a.m.*)** Postgraduate Course C.M.E.			**2 p.m.** Postgraduate Course C.M.E.		**2 p.m.** Postgraduate Course C.M.E.		
L. A. COUNTY HOSPITAL **USC SCHOOL OF MEDICINE** (Starts Saturday)	**9 a.m.*** **(Bus at 8 a.m.*)** Postgraduate Course U.S.C.	**2 p.m.** P.G. Course–Cardiac Resuscitation–U.S.C.						

*Buses will leave Ambassador Hotel, Wilshire Entrance.
U.S.C. Courses will start on Saturday.

[†]Opening meeting, House of Delegates, 3:00 p.m., Saturday, April 29.

TECHNICAL EXHIBITS—Sunset Room, Ballroom and Boulevard Room, Casino Floor.
SCIENTIFIC EXHIBITS—Venetian Room Foyer.
COUNCIL OF THE C.M.A. MEETS DAILY AT 7:30 A.M. IN THE FRENCHETTE ROOM.

4 POSTGRADUATE COURSES

C.M.A. ANNUAL SESSION • *April 29–May 3, 1961* • *Los Angeles*

THE CALIFORNIA MEDICAL ASSOCIATION *in cooperation with the Medical Schools of* UNIVERSITY OF SOUTHERN CALIFORNIA *and* COLLEGE OF MEDICAL EVANGELISTS, *will present four Postgraduate Courses at the time of the Annual Session in April. These courses will be clinically oriented and will include case presentations.*

Choose the course which most interests you, follow the course, and the 1961 session will send you back to your practice stimulated and refreshed.

Look for the program giving complete details which will arrive in your office in March.

• By COLLEGE OF MEDICAL EVANGELISTS

Clinical Neurology—9 hours

Time: Sunday, April 30, 9:00 a.m. to 12:00 noon; Monday and Tuesday, May 1 and 2, 2:00 p.m. to 5:00 p.m.

Place: White Memorial Hospital. *Fee:* $25.00

• By UNIVERSITY OF SOUTHERN CALIFORNIA

Uses and Limitations of Laboratory Tests—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: Los Angeles County Hospital. *Fee:* $25.00

Practical Gynecology—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: USC School of Medicine. *Fee:* $25.00

Cardiac Resuscitation—2 hours

SECTION I*—Saturday, April 29, 9:00 a.m. to 11:00 a.m.

SECTION II*—Sunday, April 30, 2:00 p.m. to 4:00 p.m.

Place: USC School of Medicine. *Fee:* $30.00

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*Each Section is all-inclusive. Each Section is limited to 15 registrants from areas other than San Francisco or Los Angeles.

APPLICATION FOR ENROLLMENT

Mail to: POSTGRADUATE ACTIVITIES, CALIFORNIA MEDICAL ASSOCIATION
2975 Wilshire Boulevard, Los Angeles 5, California

With check or money order in the amount of $________ made payable to *California Medical Association*

Name________________________________

Address________________________________

I am in General Practice________________ I limit my practice to________________

Medical School Attended________________ Year of Graduation________________

Please enroll me in the course indicated by ✓.

☐ 1. Clinical Neurology (9-hour course, Sunday morning; Monday and Tuesday afternoons)—$25.00

☐ 2. Uses and Limitations of Laboratory Tests (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 3. Office Gynecology (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 4a. Cardiac Resuscitation—Section I—Saturday morning—$30.00

☐ 4b. Cardiac Resuscitation—Section II—Sunday afternoon—$30.00

APPLICATION FOR HOUSING ACCOMMODATIONS

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association,** April 30*-May 3, 1961, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, your chance of securing accommodations of your choice will be better if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

Ninetieth Annual Session

CALIFORNIA MEDICAL ASSOCIATION

Los Angeles, California

APRIL 30*-MAY 3, 1961

HOTEL ROOM RATES†

	Single	Twin Beds	Suites
AMBASSADOR HOTEL			
3400 Wilshire Boulevard			
Main Building	14.00-24.00	18.00-28.00	40.00-58.00
Garden Studios	22.00-34.00	24.00-36.00	54.00-66.00
CHAPMAN PARK HOTEL			
3405 Wilshire Boulevard	10.00-11.00	14.00-16.00	20.00-28.00
Bungalows		18.00	25.00-28.00
THE GAYLORD HOTEL			
3355 Wilshire Boulevard	9.00-10.00	12.00-15.00	Single: 25.00 Double: 35.00
HOTEL CHANCELLOR			
3191 West Seventh Street	8.00-10.00	12.00	
SHERATON-WEST (formerly Sheraton-Town House)			
2961 Wilshire Boulevard	12.50-20.00	17.50	34.00

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1961

***April 29: House of Delegates will start with afternoon meeting Saturday, April 29.**

†The above quoted rates are existing rates but are subject to any change which may be made in the future.

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CALIFORNIA MEDICAL ASSOCIATION—Dept. 74
693 Sutter Street
San Francisco 2, California

Please reserve the following accommodations for the 90th Annual Session of the California Medical Association, in Los Angeles April 30-May 3, 1961. (House of Delegates members: First meeting of House begins Saturday afternoon, April 29.)

Single Room $.................................... Twin-Bedded Room $....................................

Small Suite $.................................... Large Suite $.................................... Other Type of Room $....................................

First Choice Hotel.................................... Second Choice Hotel....................................

ARRIVING AT HOTEL (date):....................Hour:..........A.M..........P.M. } Hotel reservations will be held until

Leaving (date) ....Hour:..........A.M..........P.M. } 6:00 p.m., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of both persons for each twin-bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

....

....

....

....

Individual Requesting Reservations—Please print or type Officer?.......... Delegate?.......... Alternate?..........

Name.................................... County....................................

Address.................................... City and State....................................

11th ANNUAL

REGIONAL POSTGRADUATE INSTITUTE

WEST COAST COUNTIES

Presented by Committee on Postgraduate Activities of the California Medical Association, in cooperation with Monterey, Santa Cruz and San Benito Counties Medical Societies, and the College of Medical Evangelists.

Guest Speaker: Owen H. Wangensteen, M.D., Professor and Chief, Department of Surgery, University of Minnesota Medical School; President, American College of Surgeons, 1959-60.

Del Monte Lodge, Pebble Beach

March 2 and 3, 1961

PROGRAM

THURSDAY, MARCH 2

Morning Session

PROBLEMS OF THE SENIOR CITIZEN

9:30-10:00—**Urological Problems Involved in Geriatric Practice**—Roger W. Barnes, M.D.

10:00-10:30—**Recognition and Management of Cerebral Vascular Accidents**—Julius Bauer, M.D.

10:30-11:30—**Cancer of the Alimentary Tract of the Aged**—Owen H. Wangensteen, M.D.

11:45-12:30—**Geriatric Panel:** Edward R. Bloomquist, M.D., Moderator; Roger W. Barnes, M.D.; Julius Bauer, M.D.; Owen H. Wangensteen, M.D.

Afternoon Session

ENDOCRINOLOGY

2:00-2:40—**Pituitary Adrenal Axis**—Julius Bauer, M.D.

2:40-3:20—**The Use of Progestins in Practice**—Gordon P. Griggs, M.D.

3:20-4:00—**Pediatrics**—Robert F. Chinnock, M.D.

4:15-5:00—**Endocrinology Panel:** C. Joan Coggin, M.D., Moderator; Julius Bauer, M.D.; Gordon P. Griggs, M.D.; Robert F. Chinnock, M.D.

7:30—**Banquet** (wives invited)—Speaker of national repute, followed by informal dancing.

FRIDAY, MARCH 3

Morning Session

GENERAL SURGERY

9:30-10:00—**Recognition of Cardiac Arrest**—Edward R. Bloomquist, M.D.

10:00-10:30—**Recognition and Management of Endometriosis**—Gordon P. Griggs, M.D.

10:30-11:30—**Surgical Facets of the Peptic Ulcer Problem**—Owen H. Wangensteen, M.D.

11:45-12:30—**General Surgery Panel:** Albert C. Daniels, M.D., Moderator; Edward R. Bloomquist, M.D.: Gordon P. Griggs, M.D.; Owen H. Wangensteen, M.D.

Afternoon Session

PROBLEMS OF THE JUNIOR CITIZEN

2:00-2:40—**Problems in Adolescence**—Robert F. Chinnock, M.D.

2:40-3:20—**Pediatric Urology**—Roger W. Barnes, M.D.

3:20-4:00—**Selection of Patients for Cardiac Surgery**—C. Joan Coggin, M.D.

4:15-5:00—**Pediatric Panel:** Julius Bauer, M.D., Moderator; Robert F. Chinnock, M.D.; Roger W. Barnes, M.D.; C. Joan Coggin, M.D.

HOST: Monterey County Medical Society . . . **REGIONAL CHAIRMAN:** A. F. Kandlbinder, M.D., 835 Cass Street, Monterey, California . . . **INSTITUTE FEE:** $15.00. For additional information, contact Postgraduate Activities Office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

11th ANNUAL

REGIONAL POSTGRADUATE INSTITUTE

NORTH COAST COUNTIES

MIRRORS OF SYSTEMIC DISEASE—Presented cooperatively by University of California School of Medicine, San Francisco, North Coast Counties Medical Societies, and California Medical Association Committee on Postgraduate Activities.

Flamingo Hotel, **4th Street and Farmers Lane**

SANTA ROSA, MARCH 23-24, 1961

- Certain key parts of the routine examination of patients act as the alert for the existence of generalized systemic disease. Whatever kind of practice a physician is engaged in, these remain among the most important parts of his examination. This Institute is devoted to some of these aspects. The problems of further investigation and treatment of patients with these manifestations will be discussed in an interdisciplinary manner. In the panels, patient demonstrations and discussion groups, there will be full opportunity for active participation by the registrants.

***Guest Speaker:* WALTER C. LOBITZ, JR., M.D.,** Professor of Dermatology and Head of the Division of Dermatology, University of Oregon Medical School, Portland, Oregon.

PROGRAM

THURSDAY, MARCH 23

Morning Session

PERIPHERAL BLOOD—A MIRROR OF SYSTEMIC DISEASE

9:00-10:00—**Lecture**—Paul M. Aggeler, M.D.

10:15-12:00—**Panel Discussion.** Moderator: Paul M. Aggeler, M.D.; Panel: William C. Deamer, M.D.; Richard E. Gardner, M.D.; Wallace V. Epstein, M.D.; Glenn E. Sheline, M.D.

Afternoon Session

THE SKIN—A MIRROR OF SYSTEMIC DISEASE

1:30-2:30—**Lecture**—Walter C. Lobitz, Jr., M.D.

2:45-4:45—**Panel Discussions and Presentation of Patients** (Panels meet simultaneously—and will rotate). Registrants to remain in same room throughout.

PANEL 1: **Presentation of Four Patients Accenting Collagen and Related Diseases**—Wallace V. Epstein, M.D.; William Whiting, M.D.; E. Manfred Bloner, M.D.

PANEL 2: **Presentation of Four Patients Accenting Neoplastic Disease**—John Pennington, M.D., Robert Butler, M.D.; Glenn E. Sheline, M.D., R. L. Zieber, M.D.

PANEL 3: **Presentation of Four Patients Accenting Peripheral Vascular Disease**—Richard E. Gardner, M.D.; Bradford Lundborg, M.D.; A. A. Tratar, M.D.

PANEL 4: **Presentation of Four Patients Accenting Infections**—William C. Deamer, M.D.; Walter Weber, M.D.; George Rostel, M.D.

(Lecturer will rotate from one panel to another and some patients will be presented to more than one panel.)

7:30—**Institute Banquet—Informal Dancing.**

FRIDAY, MARCH 24

Morning Session

THE URINE—A MIRROR OF SYSTEMIC DISEASE

9:00-10:00—**Lecture**—Max Rukes, M.D.

10:15-12:00—**Panel Discussion.** Moderator: Max Rukes, M.D. Panel: Vincent Di Raimondo, M.D.; Walter C. Lobitz, Jr., M.D.; Edward C. Hill, M.D.; Milton L. Rosenberg, M.D.; Felix O. Kolb, M.D.

Afternoon Session

THE EYE—A MIRROR OF SYSTEMIC DISEASE

1:30-2:30—**Lecture**—William F. Hoyt, M.D.

2:45-4:45—**Panel Discussions and Presentation of Patients** (Panels meet simultaneously—and will rotate). Registrants to remain in same room.

PANEL 1: **Presentation of Four Patients Showing Complications of Pregnancy and Hypertension**—Edward C. Hill, M.D.; Robert Huntington, M.D.; Charles Kelly, M.D.

PANEL 2: **Presentation of Four Patients Showing Endocrine Problems and Pituitary Problems**—Norman Panting, M.D.; Daniel McCaskill, M.D.; Felix O. Kolb, M.D.

PANEL 3: **Presentation of Four Patients with Urological Problems**—John Bodle, M.D.; Stanford Hampton, M.D.; Milton L. Rosenberg, M.D.

PANEL 4: **Presentation of Four Diabetic Patients**—Vincent Di Raimondo, M.D.; Vernon Lightfoot, M.D.; John H. Wuest, Jr., M.D.

(Lecturer will rotate from one panel to another and some patients will be presented to more than one panel.)

HOST: Sonoma County Medical Society . . . **REGIONAL CHAIRMAN:** Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa. **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

A "QUARTER-WAY" house program, a unique rehabilitative venture for alcoholics, will be started soon in San Francisco for men jailed for drinking offenses.

The program, supported by state funds, and carried out by the Adult Guidance Center and the Northern California Service League, will assist about 50 men released each month from jail who ask for further assistance with their drinking problems and personal rehabilitation.

More than 300 alcoholic men are discharged each month from San Francisco County Jail No. 2. In the alcoholic rehabilitation clinic in the San Bruno jail a few are considered fair candidates for rehabilitation.

Details are still being worked out but this is generally how the program will operate:

Dr. Thomas G. Bond, a psychiatrist, and psychiatric social workers assigned to the program from the Guidance Center, will select about 50 men each month who ask for further assistance. After release from jail, these selected will be housed in a "quarter-way" house some distance from Skid Row and near downtown employment centers.

The Service League, a privately-financed social organization devoted to helping released jail and penitentiary inmates find employment and achieve a measure of social reintegration, will use the state funds to provide board and room for periods up to two weeks. Housing and meals will cost $25 per man, and up to $5 per week will be available for cleaning, laundry, shaving materials and transportation to job locations.

The "quarter-way" program implies that alcoholics who want help will be assisted on the path to personal rehabilitation but will not be supported during the entire reentry into society.

The Guidance Center plans follow-up counseling and casework with the house residents and will work with other city agencies in attempting to find employment for them. A psychiatric social worker will be at the house half-time daily for personal consultation but the primary focus will be on obtaining employment.

* * *

A three-year research grant to determine the optimum levels of fluoride ion concentration in California water supplies for different temperature zones has been awarded the Division of Dental Health by the National Advisory Dental Health Research Council.

Temperature is directly related to the fluid intake of individuals. To achieve a given intake of fluoride ion in different temperature zones, the concentration of the fluoride ion should vary inversely with the temperature. An excess of fluorides will result in the mottling of teeth, while an inadequate supply will not provide the optimum resistance to caries.

The project is designed to study the dental experience of children in varying fluoride and temperature zones to provide more exact information to establish what the optimum desirable levels are.

* * *

The year 1960 closed with 365 cases of paralytic poliomyelitis reported, compared with 418 for the previous year. Deaths numbered 23, four more than recorded in 1959.

The pattern of the disease has remained unchanged during recent years. About 80 per cent of the cases occurred in non-vaccinated or poorly vaccinated persons, some 40 per cent occurring in children below the age of five years.

It is not anticipated that oral poliomyelitis vaccine will be available before the end of 1961 in any appreciable quantity, so vaccination with Salk vaccine should be continued.

WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

National Fall Conference

In keeping with the concept that "One's judgment can never be better than one's information," I recently reviewed the Fall Conference of State Auxiliaries that was held in Chicago, October 2-5. I would like to present to you a few of the highlights of that stimulating meeting.

The formal opening of the conference was preceded by a dinner at which state auxiliary presidents and presidents-elect sat in groups organized according to geographic boundaries. The Western Division, which included California, was presided over by Mrs. Hiram D. Cochran, who had cleverly decorated the tables with dolls and maps showing resources, industry and entertainment representative of each state. Membership, and particularly membership-at-large, which every state is anxious to include, was discussed. It was of real interest to note that many state and county medical societies pay their auxiliary's dues. Payment of auxiliary dues by the state or county medical society stimulates and encourages participation in auxiliary activities by the wives. (Men—please note.)

On Monday morning the conference was opened formally. Dr. F. J. Blasingame, executive vice-president of the American Medical Association, alerted us to the trying times facing medicine and asked us to dedicate ourselves to further participation in American life. He stressed the importance of auxiliary members' being informed on the important issues of the day. He emphasized that as doctors' wives and as citizens of our communities we should know why we do not believe in socialized medicine, and be keenly aware of its inferior patient care and more expensive operation.

Dr. Edward Annis, of Florida, spoke on the role of the physician's wife in legislation. He urged us to not only be cognizant of medical matters, but also to be informed on such subjects as minimum wages and industrial and labor problems. Being well informed, he stressed, permits the wives to authoritatively relay information to others with whom they talk. He was insistent that we vote for the party which would keep the practice of medicine free. There are already too many governmental controls, he said, and self-respect must supersede security.

A bridge table skit demonstrated the various phases of the life of a physician's wife—her part in politics; her role as a public relations person in her community (i.e., when she meets her husband's patients); her telephone conversations with patients; her attitude toward other physicians' wives, and her behavior when new in the community.

A clever skit, "The Public Image of a Doctor's Wife," was presented in a public opinion research interview. This depicted how the average person sees a physician's wife as a respectable, kind and helpful citizen. The civic leader sees her as a capable woman in community and church affairs. The newspaperwoman takes note of the work of the entire auxiliary—the one million dollars in scholarships to nurses since 1950, the contributions to medical schools, and the like.

Safety was stressed, with emphasis on SWAT, (Safety Water Activity Training). Every physician's child should learn to swim. We were informed that drowning is the fourth leading type of fatal accident, and we learned that each year many children between 1 and 2 years of age swallow lethal poison. The National Auxiliary had two sets of slides on poison control. Traffic safety, too, was emphasized. Some states require health certificates to obtain a driver's license. It was interesting to learn that one out of ten automobile accidents involves a teen-aged driver.

We were informed by Dr. George Lull, president of American Medical Education Foundation, that the Auxiliary gift to the fund had increased from its initial $10,000 in 1950 to $175,000 in 1959.

The membership presentation stressed the fact that collective efforts bring greater results than individual efforts. Therefore, the greater our membership, the greater is our strength. Enthusiasm and friendliness are essential.

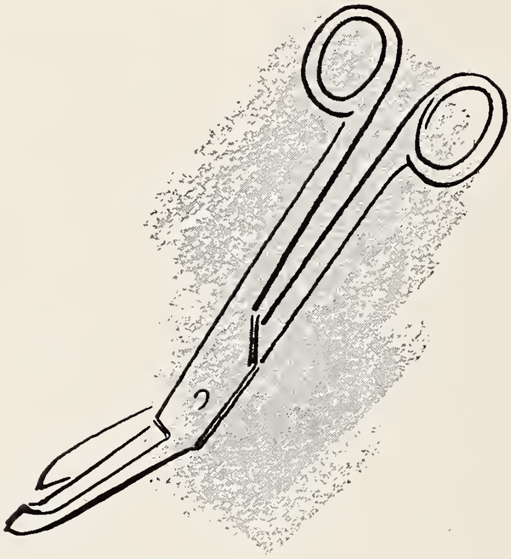
Robert M. Hanson, of the Office of Civil Defense and Mobilization in Michigan, discussed Shelters for Survival. It was interesting to learn from his message that USSR has trained 187 million Russians in civil defense; that they are building shelters and that the Communists have the upper hand in the "balance of terror." Our own Civil Defense has readied 2,000 emergency hospitals of 200 beds each. A home warning system called NEAR is in effect. People must save themselves—no agency can save people. He went on to say that it is a sign of realization of the times when we build ourselves shelters instead of swimming pools.

Dr. Leonard Larson, president-elect of the A.M.A., praised the Auxiliary for the 3 million hours of volunteer services that have been given through the Auxiliary and other organizations, and for our work for Legislation, for A.M.E.F., and for other important committees.

On Wednesday morning, after touring the beautiful A.M.A. headquarters, we were addressed by Dr. Ernest B. Howard, assistant executive vice-president of the A.M.A. He enlightened us on the first National Congress on Mental Health, which will be sponsored by the A.M.A.; the scholarships and loans available for medical students, probably through A.M.E.F.; and on the commission which has been appointed to study all facets of the cost of medical care. He congratulated the auxiliaries on helping defeat the Forand bill.

And so ended our conference. I am sure that the consensus of those who attended this exhilarating meeting was that we, as an auxiliary, are definitely needed; that we are respected for the help we have given and can give. This was most obvious from the tone of every speaker.

Mrs. Samuel Gendel
President, Woman's Auxiliary to the California Medical Association



NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

Dr. Leo G. Rigler, Los Angeles, was recently presented with the gold medal of the American College of Radiology "for distinguished and extraordinary service to the American College of Radiology and the profession for which it stands."

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Officers for 1961 for the **Metropolitan Dermatological Society** of Los Angeles, elected at the annual meeting, are as follows: President, Dr. Murray C. Zimmerman, Whittier; vice-president, Dr. Rose B. Saperstein, Los Angeles; secretary-treasurer, Dr. John W. Carney, Los Angeles; program chairman, Dr. Sidney J. Rose, Los Angeles.

SAN FRANCISCO

Some 500 physicians and attorneys from the Western states are expected to attend a meeting on **problems in the medicolegal field** at the Mark Hopkins Hotel, March 10 and 11.

Sponsored by the American Medical Association's Legal and Socio-Economic Division, the meeting will have panel discussions on Res Ipsa Loquitur in Medical Professional Liability Cases, Use and Misuse of Demonstrative Evidence in Personal Injury Cases, Expert Medical Testimony, and the Status of Physician-Attorney Relations.

A half-day session will be devoted to **developments and trends in judicial procedures.** Included will be a consideration of the separation of the questions of liability and damages in the trial of a case, impartial medical testimony projects, developments in pre-trial areas and discovery procedures, and the "liability without fault" approach in all personal injury litigation.

Another half-day session will deal with a discussion of the most important cases in the medicolegal field during the past 18 months. The cases will not only be discussed by legal experts from the point of view of the plaintiff and the defendant, but also by physicians as to the medical implications of the decisions rendered.

Registration fee for the conference will be $5 to cover the cost of a luncheon on Saturday and a copy of the proceedings. Advance registration cards may be obtained by writing: C. Joseph Stetler, director, Legal and Socio-Economic Division, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

This is the first in a series of three medico-legal meetings being sponsored by the A.M.A. this year. Other conferences will be held in Louisville, April 14 and 15, and in New York, April 28 and 29.

* * *

The Western Regional Meeting of the **American College of Gastroenterology** will be held in San Francisco, Sunday, March 5, 1961. The sessions, which will be held at the Fairmont Hotel, will commence at 9:00 a.m.

The western region consists of the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Members of the medical profession are invited to attend. A copy of the program may be obtained from the Secretary, American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

Dr. Julius H. Comroe, Jr., director of the Cardiovascular Research Institute, University of California Medical Center, San Francisco, was a recipient last month of a Distinguished Achievement Award from *Modern Medicine,* a medical journal published in Minneapolis. Dr. Comroe was honored for "leadership in investigation of pulmonary function and clinical use of autonomic drugs."

Ten recipients are selected each year by the editorial board of *Modern Medicine* from nominations made by deans of medical schools, leaders of medical organizations and readers of the journal.

* * *

The second of the yearly **Low-Beer Memorial Lectures** will be held at the University of California Medical Center, San Francisco, on March 2, 1961. **Dr. Jean Bouchard,** associate professor of radiology, Faculty of Medicine, McGill University, and radiologist, Royal Victoria Hospital, Montreal, Canada, will speak on "Radiation Therapy in the Management of Pituitary Tumours." The lecture will be held in the Auditorium, Medical Sciences Building, at 8 p.m.

The Low-Beer Memorial Lectureship in Radiation Therapy was established in honor of the late Dr. Bertram V. A. Low-Beer, professor of radiology at the University until his death in 1955.

In addition to the formal lecture, Dr. Bouchard will participate in five conferences to be held in the Medical Sciences Building and Moffitt Hospital February 28 and March 1, 2 and 3, to which the members of the medical profession are invited.

Further information may be obtained from Dr. Franz Buschke, professor of radiology, UC Medical Center, San Francisco 22.

SAN JOAQUIN

Dr. William Broek of Stockton became president of the San Joaquin County Medical Society at the annual meeting in January, succeeding Dr. C. A. Lucky. Dr. John T. McNally was elected vice-president and Dr. Dora Ames Lee was reelected secretary-treasurer.

SANTA CLARA

The Fourth Annual Palo Alto Medical Clinic Symposium, sponsored by the clinic and the Palo Alto Medical Research Foundation, will be presented Saturday, April 15, 1961. Further information may be obtained from Dr. John F. Weigen, program chairman, Palo Alto Medical Clinic, 300 Homer Avenue, Palo Alto.

SOLANO

Dr. Carlton C. Purviance, Vallejo, was installed as president of the Solano County Medical Society at a meeting of the organization in January. Dr. William J. Olson, Fairfield, was elected president-elect and Dr. William S. Hebert, Vallejo, secretary-treasurer.

GENERAL

Two Southern California physicians were reappointed to the **Medical Care Advisory Committee** of the State Social Welfare Board late in January. They are Dr. William F. Quinn, Los Angeles, and Dr. Edward Lee Russell, Health Officer of Orange County.

The medical care committee advises the Welfare Board on matters related to the state's Medical Care program. Both Dr. Quinn and Dr. Russell have served on the committee since 1957, when the Medical Care program was initiated.

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The forty-second annual session of the **American College of Physicians** will be held at Miami Beach, Florida, May 8 to 12.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Management of Fractures and Dislocation, and Application of Casts, Splints and Bandages. Thursday through Saturday, February 23-25. Eighteen hours. Fee: Lecture and Lab $70.00; Lecture only $40.00.

Use of Indirect Ophthalmoscopy in Retinal Detachment Surgery. Thursday through Saturday, March 2-4. Eighteen hours.*

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $2.50.

Management of Pain by Therapeutic Nerve Blocks—Harbor Hospital. Friday through Sunday, April 7 through 9. Eighteen hours. Fee: $55.00 (includes two luncheons).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through 28. Thirty-two hours. Fee: $200.00.

Management of Trauma—Harbor Hospital. Friday and Saturday, May 19 and 20. Nine hours.*

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Dermatology in Clinical Practice. Tuesday, July 11. Six hours. Fee: $20.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Endocrinology. Friday and Saturday, August 4 and 5.†

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

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*Fee to be announced.
†Hours and fees to be announced.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Medicine for General Practitioners. Mount Zion Hospital. Monday through Friday, February 20 through 24. Thirty-five hours. Fee: $85.00.

Diseases of the Nervous System in Childhood. Thursday through Saturday, March 2 through 4. Twenty-one hours. Fee: $50.00.

Urology for Non-Urologists. Friday and Saturday, March 10 and 11. Fourteen hours.*

Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Sunday, March 15 through 19. Thirty-five hours.*

Evening Lecture Series in Medicine, Eden Hospital. Tuesday evenings, April 4 through May 23.†

Laboratory Investigation of Endocrine Disorders. Friday through Sunday, April 7 through 9. Twenty-one hours.*

General Surgery. Thursday and Friday, April 20 and 21. Fourteen hours.*

Ear-Nose-Throat. Thursday through Saturday, May 11 through 13. Twenty-one hours.*

Proctology. Thursday and Friday, May 18 and 19. Fourteen hours.*

Water, Salts and Steroids. Thursday through Saturday, May 25-27. Twenty-one hours.*

A Course in Ophthalmology. Thursday through Saturday, June 1-3. Twenty-one hours.*

Electrocardiography. Friday and Saturday, June 9 and 10. Fourteen hours.*

A Course in Psychiatry for Physicians in General Practice. Thursday through Saturday, June 15-17. Twenty-one hours.*

Cerebral Palsy. Thursday and Friday, June 29 and 30. Fourteen hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Diabetes and Thyroid Disease: Current Methods in Diagnosis and Treatment. Saturday, February 25. Eight hours. Fee: $25.00.

The Four R's of Fractures: Recognition, Reduction, Retention, Rehabilitation. Saturday, March 11. Eight hours. Fee: $25.00.

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Note:

Each one of the conferences listed above	$ 25.00
A series of any 5 conferences	100.00

Operable Heart Disease. Friday and Saturday, March 3 and 4.

Conference on Keratoplasty. Wednesday through Friday, March 8 through 10. Limited enrollment.

General Review Course for Practicing Physicians. Thursday through Saturday. March 16 through 18.

Conference on Strabismus. Wednesday through Friday. July 12 through 14.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Nuclear Medicine:

Part II, eight weeks. Fee: $350.00.
Part III, twelve weeks. Fee: $350.00.

Ward Walks in Rare Diseases. Thursday evenings, May 4 to July 6, 7:30-9:30 p.m. Los Angeles County Hospital. Tuition: $100.00.

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations):

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only):

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION ANNUAL SESSION POSTGRADUATE COURSES

Clinical Neurology in cooperation with College of Medical Evangelists. White Memorial Hospital. Sunday, April 30, 9-12 a.m.; Monday and Tuesday, May 1 and 2, 2-5 p.m. Fee: $25.00.*

Office Gynecology in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Use and Limitations of Laboratory Tests in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Cardiac Resuscitation: in cooperation with USC School of Medicine. USC Research Building, Room 211, 2025 Zonal Avenue, Los Angeles 33. Section I: Saturday, April 29, 2-4 p.m.; Section II: Sunday, April 30, 2-4 p.m. (each Section is all-inclusive). Each Section is limited to 10 registrants from areas other than Los Angeles and San Francisco. Fee: $30.00, each Section.*

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

For Dunsmuir, Redding, Chico and Marysville in cooperation with Stanford University School of Medicine. Begins week of March 5, 1961.

For Eureka, Ukiah, Napa and Auburn in cooperation with University of California School of Medicine, San Francisco. Begins week of March 5, 1961. *Napa* course begins March 15, 1961.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1961

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 14 and 15, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* J. Malcolm Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 30 and July 1, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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*Chartered buses for Registrants will leave the Ambassador Hotel one hour before the beginning of each course and will return just after each course is over.

AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

FEBRUARY MEETINGS

Los Angeles Society of Neurology and Psychiatry in cooperation with California Spinal Cord Research Foundation, Conference "Recent Contributions of Basic Research to Paraplegia." February 17 and 18. Los Angeles. *Contact:* Robert P. Sedgwick, M.D., secretary-treasurer, 2010 Wilshire Blvd., Los Angeles 57.

California Trudeau Society in cooperation with Veterans Administration and Stanford University School of Medicine, Symposium on Pulmonary Disease. February 18, 9:30 a.m. to 4:30 p.m., New Veterans Administration Hospital, Palo Alto. *Contact:* R. Morton Manson, M.D., chairman, 130 Hayes St., San Francisco 2.

California Tuberculosis and Health Association, California Trudeau Society Annual Joint Meeting. February 19 through 22, Jack Tar Hotel, San Francisco. *Contact:* Executive director, C.T.H.A., 130 Hayes Street, San Francisco.

Southern California Society of Gastroenterology. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 28, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

MARCH MEETINGS

Second Low-Beer Memorial Lecture. University of California School of Medicine. March 2, 8:00 p.m. Auditorium-S, Medical Sciences Bldg., U. C. San Francisco. *Contact:* F. Buschke, M.D., Professor of Radiology, University of California Medical Center, San Francisco 22, Calif.

Southwestern Pediatric Society Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

Orange County Heart Association, Annual Symposium on Heart Disease. Saturday, March 11. All day. Charterhouse Hotel, Anaheim. *Contact:* Howard G. Buswell, Exec. Director, P. O. Box 1704, Santa Ana.

Anesthesia Section of Los Angeles County Medical Association 6th Annual Spring Postgraduate Meeting. March 11 and 12. Statler Hilton Hotel, Los Angeles. *Contact:* Thomas W. McIntosh, M.D., 686 East Union Street, Pasadena.

College of Medical Evangelists Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

Pioneers Memorial Hospital 11th Annual Medical and Surgical Postgraduate Assembly. March 17 and 18. Pioneers Memorial Hospital, Brawley. *Contact:* George C. Holleran, M.D., program chairman, P. O. Box 159, Brawley.

Third Annual Cancer Seminar presented by the American Cancer Society, Nevada Division, Inc., Reno. To be held at the Riverside Hotel Garden Room, Reno, March 28 to 30. *Contact:* American Cancer Society, Nevada Division, Inc., 101 W. Arroyo Street, Reno, Nevada.

Fifth Annual Postgraduate Symposium on Heart Disease sponsored by San Mateo and Santa Clara County Heart Associations, March 29, Veterans' Administration Hospital, 3801 Junipero Serra Blvd., Palo Alto, 9:00 a.m. to 5:30 p.m. *Contact:* John S. Blum, executive director, San Mateo County Heart Association, 45 North B Street, San Mateo, or Mr. William Allayaud, executive director, Santa Clara Heart Association, 461 Porter Building, San Jose.

APRIL MEETINGS

Industrial Medical Association. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

Fourth Annual Palo Alto Clinic Symposium sponsored by the Clinic and the Palo Alto Medical Research Foundation, April 15, 300 Homer Avenue, Palo Alto. *Contact:* John F. Weigen, M.D., program chairman, Palo Alto Clinic, 300 Homer Avenue, Palo Alto.

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

Pacific Coast Oto-Ophthalmological Society Annual Meeting. April 30-May 4. Riviera Hotel, Palm Springs. *Contact:* Al Miller, M.D., Secretary, 500 South Lucas Ave., Los Angeles 17.

MAY MEETINGS

Los Angeles County Heart Association Annual Meeting, May 3, 12:00 noon to 2:00 p.m. Pacific Ballroom, Statler Hilton Hotel, Los Angeles. *Contact:* Mrs. Sally Smalley, Public Information Director, 2405 W. 8th Street, Los Angeles 57.

California Conference of Local Health Officers Semi-Annual Meeting, May 4 and 5, Los Angeles. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

Hawaii Medical Association Annual Meeting. May 4-7. Honolulu, Hawaii. *Contact:* Lee McCaslin, Executive Secretary, 510 So. Beretania, Honolulu 13.

American Association of Genito-Urinary Surgeons (for members and invited guests). May 10-12. Del Monte Lodge, Pebble Beach. *Contact:* William J. Engel, M.D., Secretary-Treasurer, Cleveland Clinic, 2020 E. 93rd St., Cleveland 6, Ohio.

Nevada Chapter American Academy of General Practice. May 18-20, Riverside Hotel, Reno, Nevada. *Contact:* John M. Watson, Secretary, 1845 Prater Way, Sparks, Nevada.

Medical Staff of Children's Hospital of the East Bay Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

California Heart Association Annual Meeting and Scientific Session. May 19 through 21, Disneyland Hotel, Anaheim. *Contact:* J. Keith Thwaites, Exec. Director 1370 Mission Street, San Francisco.

American Orthopaedic Association (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

American Urological Association, Inc. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

Memorial Hospital of Long Beach, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

SUMMER AND FALL MEETINGS

Western Branch, American Public Health Association Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

Nevada State Medical Association 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23-26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

Washington State Medical Association Annual Convention. September 17-20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

Western Industrial Medical Association Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

Los Angeles County Heart Association Professional Symposium. October 11-12. 9 a.m.—5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

California Academy of General Practice 1961 Scientific Assembly. October 15-18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

American Society of Anesthesiologists, Inc., October 22 to 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

American College of Chest Physicians Seventh Annual Postgraduate Course on Diseases of the Chest, December 4 to 8, 9 to 5 daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.

THE PHYSICIAN'S *Bookshelf*

NINE MONTHS TO GO—Robert McNair Mitchell, M.D., with Ted Klein. J. B. Lippincott Company, East Washington Square, Philadelphia, Pa., 1960. 224 pages, $3.95.

This instruction book for expectant mothers was conceived by a journalist who does medical writing for laymen and he was assisted in its preparation by a Philadelphia obstetrician. It covers the usual ground, from pregnancy tests to layettes, plus some consideration of the economics of obstetrical care (at least in the Philadelphia area) and also advice about subsequent control of conception. A short appendix presents various religious views on birth control, and another appendix provides answers to what are said to be the fifty questions most often asked by prenatal patients. Not all obstetricians would agree with all the answers but, in the main, the advice and information offered seems sound and up to date.

This little volume tries to take a very practical look at obstetric care but, although well written, does not appear to be superior to several other prenatal guides for laymen. We have been treated to several chatty efforts of this sort since it became obvious that Eastman's "Expectant Motherhood" was beginning to rival the Bible as a best seller, and that the market for such books was practically boundless.

CHAS. E. MCLENNAN, M.D.

* * *

PSYCHOPHYSIOLOGIC APPROACH IN MEDICAL PRACTICE—William W. Schottstaedt, M.D., Associate Professor, Department of Preventive Medicine and Public Health, Department of Medicine, and Department of Psychiatry, Neurology and the Behavioral Sciences, The University of Oklahoma Medical Center. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1960. 352 pages, $8.00.

This is not another textbook of psychosomatic medicine or a psychology of the practice of medicine written for nonpsychiatric physicians. It is an attempt to define stress in terms of psychophysiological reactions with physical, biological and social parameters and to show how stress works in the etiology of disease processes and how it interferes with healing and restitutive phenomena.

The author clearly shows that stress is an individual matter and that it depends on how an individual evaluates the stimuli impinging on him in terms of his expectations and his past life experiences. His approach is adaptational and not tied to any of the "schools" of psychology. He discusses mental mechanisms as methods for coping with stress and having concomitant physiological expressions which are important in medicine.

The second half of the book deals with interviewing, the doctor-patient relationship and psychological principles of patient management and therapy. Interviewing is presented as a means of identifying and evaluating the stressful life situations which confront a patient. The author emphasizes the importance of the doctor-patient relationship in helping the patient to cope with his stresses. The forces which the patient brings with him and which tend to disrupt the doctor-patient relationship by activating conflicts and anxieties within the physician are discussed in some detail. Methods for coping with these problems are outlined.

This book is a synthesis of a large body of contemporary literature and will save the student many hours of reading and many more of thinking. For the most part it is easy reading. There are some sections which are somewhat nebulous and with somewhat tenuous connection to other sections of the book. However, this is probably more a reflection of the state of our knowledge than anything else. My overall impression is quite favorable and I recommend this book to medical students and the nonpsychiatric physician.

EDWARD J. KOLLAR, M.D.

* * *

INTRASPINAL TUMORS OF CHILDHOOD—Robert W. Rand, M.D., Ph.D., Assistant Professor of Neurological Surgery, University of California School of Medicine, Los Angeles; and Carl W. Rand, M.D., Emeritus Professor of Neurological Surgery, University of Southern California School of Medicine, Los Angeles. Charles C. Thomas, Publisher, 301 East Lawrence Avenue, Springfield, Ill., 1960. 560 pages, $16.50.

In this monograph the authors, father and son, have developed an impressive survey of present-day knowledge of the spinal tumors occurring under the age of 15, using their own series of 72 cases as a point of departure rather than as the principal theme of the discussion. As a result, this book has something of value for anyone having occasion to be informed on matters pertaining to the subject, including particularly the neurologist, neurological surgeon, pediatrician, pathologist and radiologist. The general practitioner with a problem or a bent in the direction of the conditions suggested by the title will also find it profitable. The well planned summaries and tables accompanying most of the chapters facilitate its use as a quick and ready basis of review.

The subject matter is divided with the various categories of disease recognized as basically occupying space within the spinal canal and as such affecting the nervous system. Included are seedings from cerebral tumors as well as those spreading from adjacent structures. The granulomas are discussed, though less extensively than the others. The inclusion of instances of protrusion of intervertebral discs into the spinal canal is neat and pertinent.

Written as it is along the classic format with detailed case reports and an informative review of the literature, without pretense at exhaustive completeness, it also makes pleasant reading beyond its scientific value.

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Electrocardiography & Heart Disease	One Week, April 17
Diagnostic Radiology	Two Weeks, April 3
Board of Surgery Review, Part II	Two Weeks, March 6
Gynecology, Office & Operative	Two Weeks, April 10
Vaginal Approach to Pelvic Surgery	One Week, March 27
Obstetrics, General & Surgical	Two Weeks, March 13
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Advances in Medicine	One Week, March 13
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Migraine Sufferers Helped By Insight Into Way of Life

Two out of three migraine sufferers could be "greatly helped" by insight into the factors in their lives which may cause the headaches, according to Dr. Adrian M. Ostfeld of Chicago.

Dr. Ostfeld, writing in the October 29 issue of the *Journal of the American Medical Association,* said:

"For prevention of migraine headache, the simplest and most effective remedy is still a sympathetic relationship with the patient and a kindly, helpful attitude on the part of the physician.

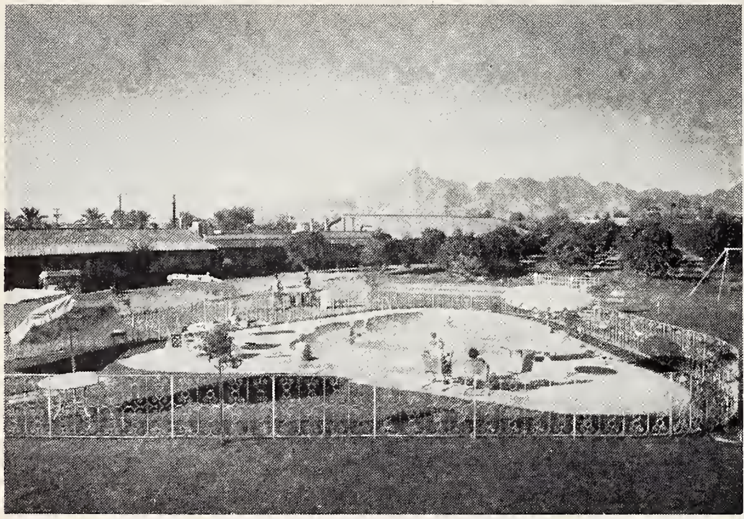
"A more penetrating relationship can be one in which some attempt is made to have the patient recognize those factors in his life that may be causing him to go in the wrong direction or at the wrong pace. Two out of three patients with migraine can be greatly helped by any physician who is interested in human problems and is willing to spend a minimum of time with a patient in reviewing them with him."

In discussing treatment of migraine headaches, Dr. Ostfeld said tranquilizers have proved of little value, adding:

"Patients with migraine, who appear to have a great need for activity and accomplishment, are extremely reluctant to 'give in' to the sedative effects of these agents."

Dr. Ostfeld said there are two methods of treating migraine headaches. The first is the use of agents,

(Continued on Page 56)



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Migraine Sufferers Helped By Insight Into Way of Life

(Continued from Page 54)

such as ergotamine tartrate, designed to constrict the blood vessels of the brain which dilate during a migraine attack. The other approach, he said, is the use of agents that prevent the liberation of, or antagonize, the effects of the "headache substance."

Medical scientists believe that migraine headaches are caused by the release of an unknown substance or substances capable of inducing the blood vessels of the brain to dilate. Several substances are being investigated. One of these is serotonin, a compound found in the blood.

Serotonin can cause migraine headaches and antiserotonin therapy can reduce the frequency and severity of attacks when taken as a preventative agent. However, this only holds true in some persons.

Anti-serotonin therapy, although its success has been limited, may open the way for development of more effective drugs of this kind, Dr. Ostfeld said.

The author is associated with the department of preventive medicine, University of Illinois College of Medicine.

Stop Children from Eating Dirt, Paint, Crayons

Children should be prevented from eating dirt, plaster, paint, hair, or crayons.

These foreign substances "may cause not only severe illness and permanent impairment but sometimes even death," Dr. Sydney S. Gellis, professor and chairman of the department of pediatrics, Boston University School of Medicine, warns.

Dr. Gellis said in *Today's Health*, the American Medical Association magazine, that dirt is among the most common substances eaten by children and could cause permanent damage to the liver.

Paint and plaster containing lead paint can cause lead poisoning which can result in brain damage and permanent mental retardation in youngsters under four years old, he said.

Any child suspected of having eaten such substances should be taken to a physician without delay.

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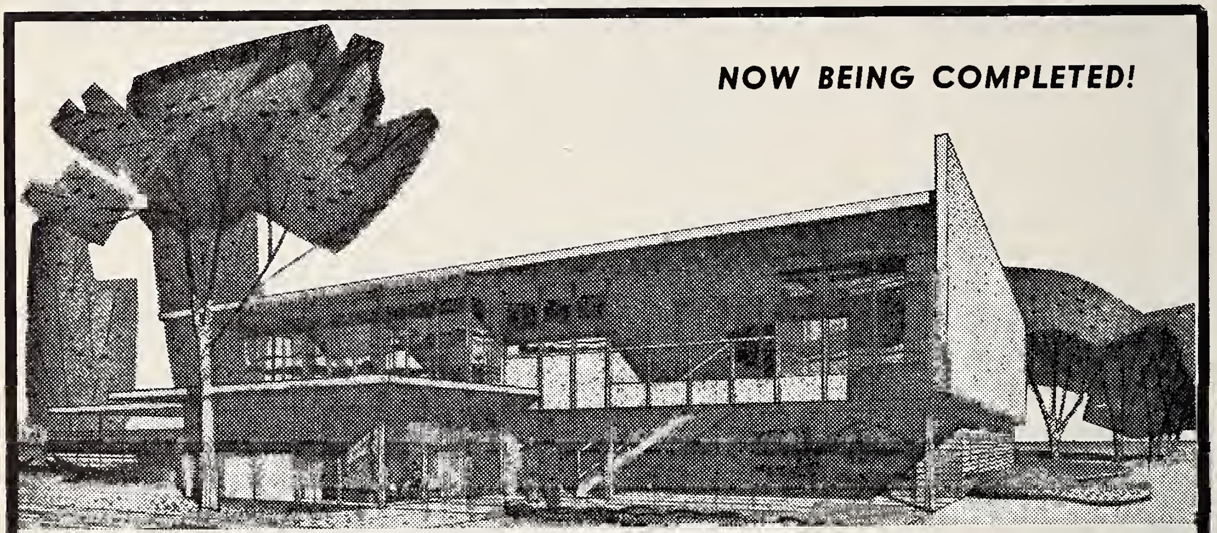

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REFER TO PDR Page 669

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Beachhead Established in Battle Against Traffic Accidents

A beachhead has been established in the battle against traffic accidents—a scientific study to determine if reckless driving is a disease.

The study to determine whether there is some correlation between physical shortcomings and driving performance was described in an article in the December *Today's Health*, published by the American Medical Association.

"Nothing of such scope has ever been attempted before," the article said. "The criteria established by such research may some day prove to be a sort of 'vaccine' against reckless driving.

"This will be the first big step toward further refinements of all physical criteria for determining qualification for a driver's license. Such criteria would be needed by state motor vehicle authorities to invoke sterner control measures and, if challenged, to produce scientifically valid proof that would stand up in court."

From 20,000 to 25,000 Connecticut motorists will undergo a voluntary screening in a specially built six-room mobile clinic to determine if there is a relationship between their physical, physiological, or psychological conditions and their driving records, with the emphasis on physical factors. Each will be tested for hearing and vision deficiencies, diabetes, anemia, and heart and lung pathology.

Later, depending on the findings of the initial studies and the availability of appropriations, the investigation will be extended to physiological factors, such as the effect of drugs on drivers, and psychological factors, such as the effect of drivers' emotional attitudes on their driving.

Medicine, public and private research, and the government have joined in a modest initial assault on the "epidemic of deaths on the nation's highways," the article said.

The U. S. Public Health Service is conducting the experiment in the field which probably will take 18 months. The follow-up task of keeping tabs on the records of the drivers who have been examined will be done by the State Motor Vehicle Department and will take at least five years.

Gov. Abraham Ribicoff of Connecticut told *Today's Health* that the study "is exciting to health authorities because, for the first time, it gives them an opportunity to determine whether methods they have used successfully against various diseases will work against the plague we know as the traffic accident; it is equally exciting to all who are interested in highway safety because of the lifesaving promise it holds. "To combat a disease, the first step is to determine what causes it. Then we seek means of eliminating those causes."

There is every reason to believe that this study will add vastly to our knowledge of why and how traffic accidents occur, the governor said.

The article was written by Ernest L. Barcella.

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BOOKS RECEIVED

Books received by CALIFORNIA MEDICINE *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits.*

BEDSIDE MEDICINE—I. Snapper, M.D., Director of Medicine and Medical Education, Beth-El Hospital, Brooklyn, N. Y., and Consultant in Medicine, Veterans Administration Hospital, Brooklyn, N. Y. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 592 pages, $14.50.

BIOCHEMICAL ASPECTS OF MICROBIAL PATHOGENICITY—Annals of The New York Academy of Sciences—Volume 88, Art. 5, Pages 1021-1318, November 21, 1960. Published by The New York Academy of Sciences, 2 East Sixty-Third Street, New York 21, New York, 1960. 297 pages, $5.00.

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BLOOD DISEASES OF INFANCY AND CHILDHOOD—Carl H. Smith, M.A., M.D., Professor of Clinical Pediatrics, Cornell University Medical College, New York, N. Y.; Attending Pediatrician, The New York Hospital, New York, N. Y.; Consulting Pediatrician, Beekman-Downtown Hospital, New York, N. Y. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1960. 572 pages, $17.00.

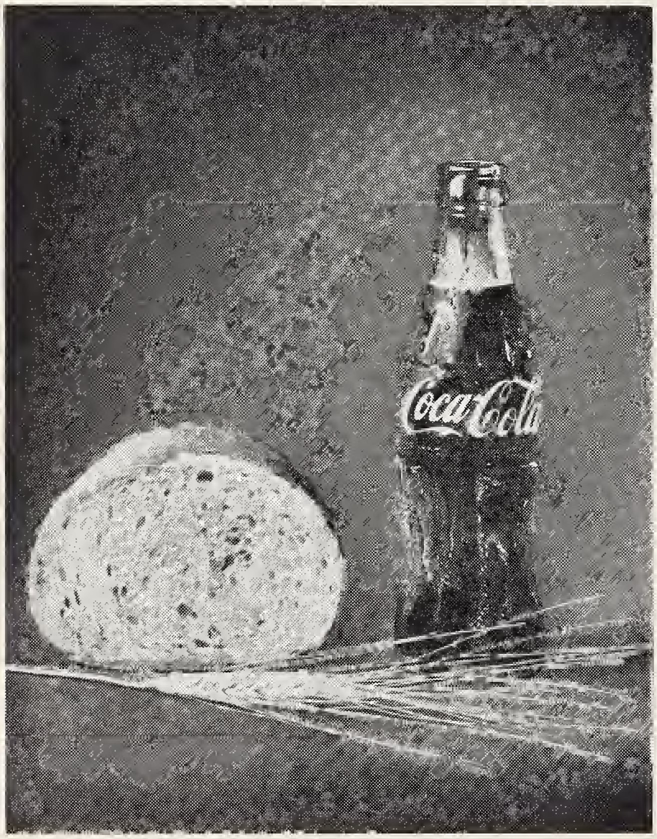
CIBA FOUNDATION STUDY GROUP NO. 5—REGULATION OF THE INORGANIC ION CONTENT OF CELLS—In honour of Prof. E. J. Conway. G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilia M. O'Connor, B.Sc., editors for the Ciba Foundation. Little, Brown & Company, 34 Beacon Street, Boston 6, Massachusetts, 1960. 100 pages, $2.50.

CLINICAL CARDIOPULMONARY PHYSIOLOGY—Second Edition, Revised and Enlarged—Sponsored by The American College of Chest Physicians. Edited by Burgess L. Gordon, M.D., Chairman, Albuquerque, New Mexico. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 1001 pages, $28.50.

CLINICOPATHOLOGICAL CONFERENCES OF THE MASSACHUSETTS GENERAL HOSPITAL — Selected Medical Cases—Benjamin Castleman, M.D., Chief, James Homer Wright Pathology Laboratories, Massachusetts General Hospital, and Clinical Professor of Pathology, Harvard Medical School; and H. Robert Dudley, Jr., M.D., Assistant in Pathology, Massachusetts General Hospital, and Instructor in Pathology, Harvard Medical School. Little, Brown & Company, Boston 6, Massachusetts, 1960. 295 pages, $12.50.

DEUTERIUM ISOTOPE EFFECTS IN CHEMISTRY AND BIOLOGY—Annals of The New York Academy of Sciences, Volume 84, Art. 16, Pages 573-781, November 25, 1960. Published by The New York Academy of Sciences, 2 East Sixty-third Street, New York 21, N. Y., 1960. 208 pages.

(Continued on Page 68)



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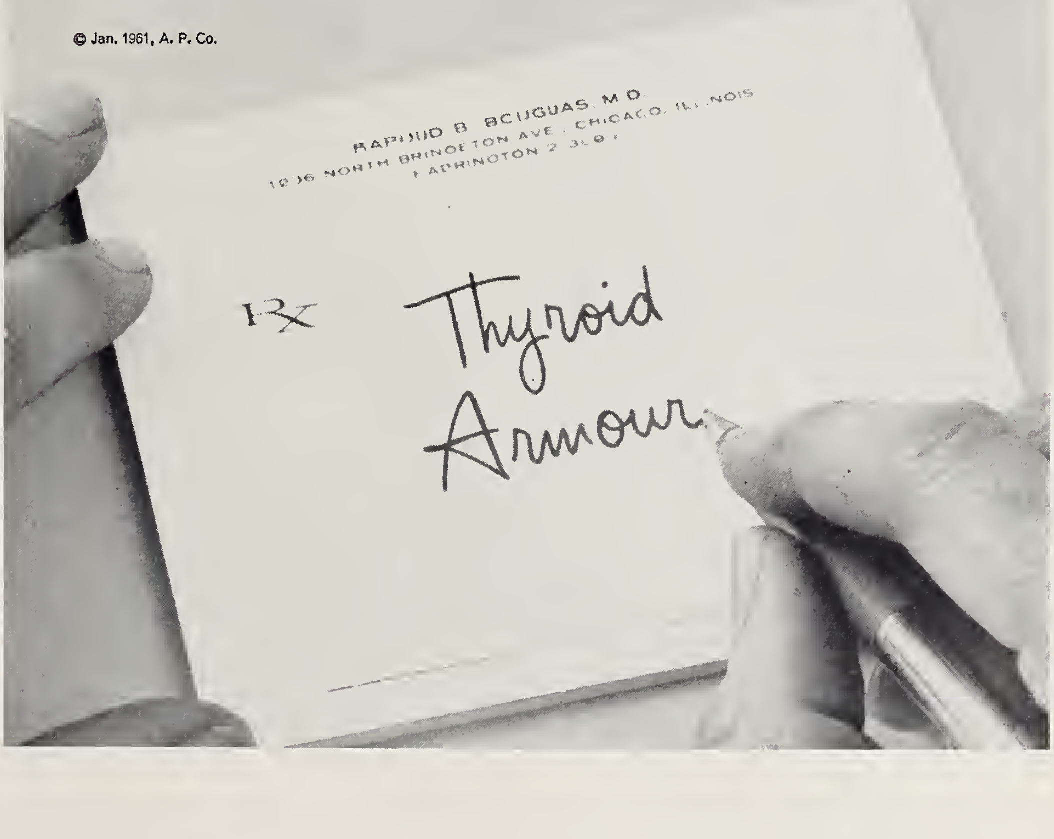

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BOOKS RECEIVED

(Continued from Page 66)

EPIDEMIC!—Frank G. Slaughter. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1961. 286 pages, $3.95.

THE GENTLE LEGIONS—Richard Carter. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1961. 335 pages, $4.50.

HEART SOUNDS AND MURMURS—A Clinical and Phonocardiographic Study. P. A. Ongley, Consultant in Pediatrics, Mayo Clinic, Rochester, Minnesota; Howard B. Sprague, Board of Consultation, Massachusetts General Hospital; M. B. Rappaport, former Head of Department of Electrophysiologic Research, Sanborn Company, Waltham, Massachusetts; and A. S. Nadas, Cardiologist, Children's Hospital, Boston, Massachusetts. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 360 pages, $9.75.

INFECTIOUS DISEASES OF CHILDREN—Second Edition—Saul Krugman, M.D., Professor and Chairman, Department of Pediatrics, New York University School of Medicine, New York, N. Y.; Director, Pediatric Service, Bellevue Hospital Center, New York, N. Y.; Director, Pediatric Service, University Hospital, New York, N. Y.; and Robert Ward, M.D., Professor and Head, Department of Pediatrics, University of Southern California School of Medicine, Los Angeles, Calif.; Physician-in-Chief, Children's Hospital, Los Angeles, Calif. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1960. 398 pages, $13.00.

MEDICINE AS AN ART AND A SCIENCE—A. E. Clark-Kennedy, M.A., M.D. (Cantab.), F.R.C.P. (London), Fellow of Corpus Christi College, Cambridge, Consulting Physician to the London Hospital and formerly Dean of the Medical School; and C. W. Bartley, M.A., D.M. (Oxon.), M.D. (McGill), M.R.C.P. (London), Physician to the Lambeth Hospital. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1960. 425 pages, $6.25.

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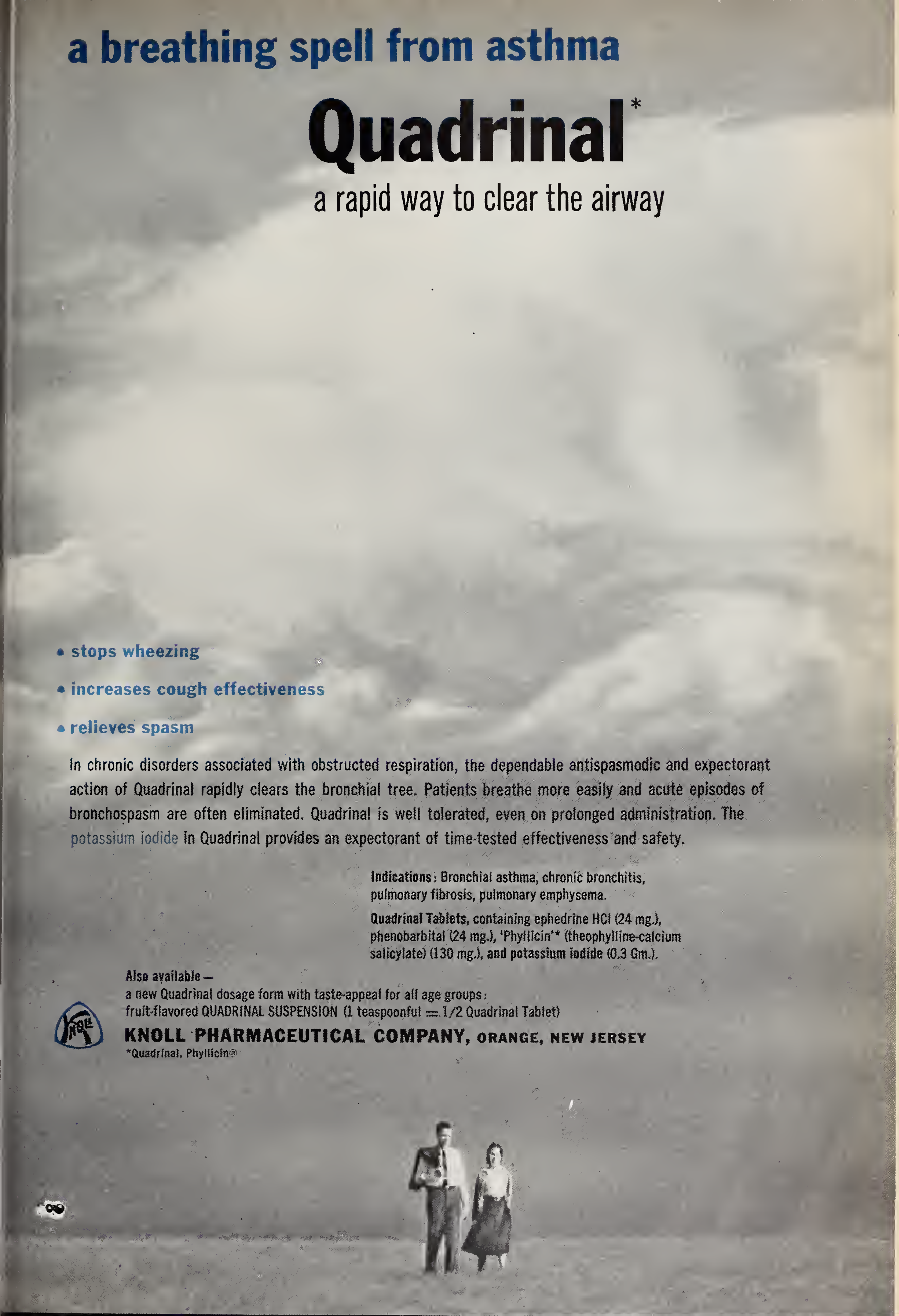

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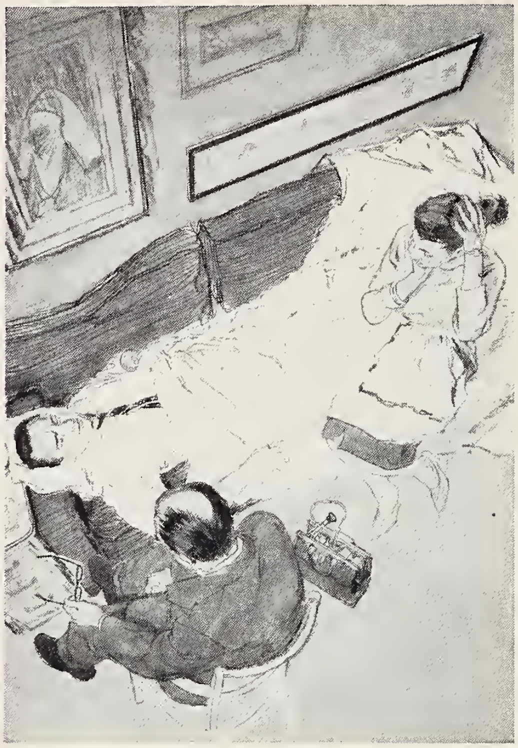

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AMRF Gives $25,000 to Study Infant Mortality

The American Medical Research Foundation has announced that it has made a $25,000 grant to launch a pilot program which will provide detailed information on the births of 100,000 babies in 100 hospitals during 1961.

Serving as project director will be Dr. Sydney H. Kane, Philadelphia, who has had experience in maternal and newborn data processing for the past 14 years. He will be assisted by an advisory committee, headed by Dr. Philip Barba, Philadelphia. The project will be centered in newly-opened headquarters in Philadelphia.

"The key purpose of this study," Dr. Kane said, "is to find out 'how' and 'why' many babies die at birth or shortly afterward. Our aim is a reduction in infant mortality as well as a reduction in incidence of associated problems causing much pain and anguish to parents, but not necessarily causing death."

The American Medical Research Foundation, which will sponsor the study and expend the $25,000 in sums as needed, was established by the A.M.A. House of Delegates at the Philadelphia meeting in December 1957.

The president of the foundation is Dr. Hugh H. Hussey, vice chairman of the A.M.A. Board of Trustees and dean of Georgetown University School of Medicine, Washington, D. C. Other officers and members are: Drs. Raymond M. McKeown, Coos Bay, Ore., vice president; James Z. Appel, Lancaster, Pa., secretary-treasurer; A.M.A. President-elect Leonard W. Larson, Bismarck, N. D., and Julian P. Price, Florence, S. C., chairman of the A.M.A. Board of Trustees.

Numerous meetings of the American Medical Association's Committee on Maternal and Child Care, held throughout the country in conjunction with many other medical societies and organizations, indicated a research program was needed. The American Medical Research Foundation subsequently provided the $25,000 to initiate a year's investigation, and will act as recipient for, and will assist in obtaining, the additional funds required to complete the project.

The American Medical Research Foundation Perinatal Study, and the members of its advisory committee, will work with hospital staff committees, drawing on all the disciplines associated with reproduction—obstetricians, anesthesiologists, general practitioners, pediatricians, surgeons, pathologists, and nurses. In addition to the hospital committees, it is hoped that similar committees will be set up at the county and state medical society levels.

(Perinatal mortality is defined as "those deaths of fetuses and newborn infants occurring before, during, and soon after birth," while perinatal morbidity is defined as a "pathological condition, or

(Continued on Page 34)

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AMRF Gives $25,000 to Study Infant Mortality

(Continued from Page 24)

conditions, observed in the fetus or infant during the perinatal period.")

The AMRF Perinatal Study will make a code sheet available to all participating hospitals. This code sheet provides uniform terminology and reporting data. Staff personnel will check for completeness of the data gathered, and anonymity will be provided.

Data will be collected on infection, infection transmission, bleeding, childbirth labor, age of mother, previous reproductive history, and other information. All data will be forwarded to the AMRF Perinatal Study and processed at the Philadelphia headquarters by means of the most modern electronic devices provided without cost by Sperry Rand Corporation. The statistical summations will be turned back to the hospital and state and county medical committees for analysis and study.

Dr. Kane said that "for the first time anywhere in the world, doctors will have access to a huge volume of information on newborn and maternity problems previously unknown."

He said that success of the pilot study will determine whether it will be extended eventually to cover a majority of babies born in the United States. Last year there was in excess of 4,000,000 births in this country.

Besides Dr. Barba, members of the advisory committee, who will work with the American Medical Research Foundation, are:

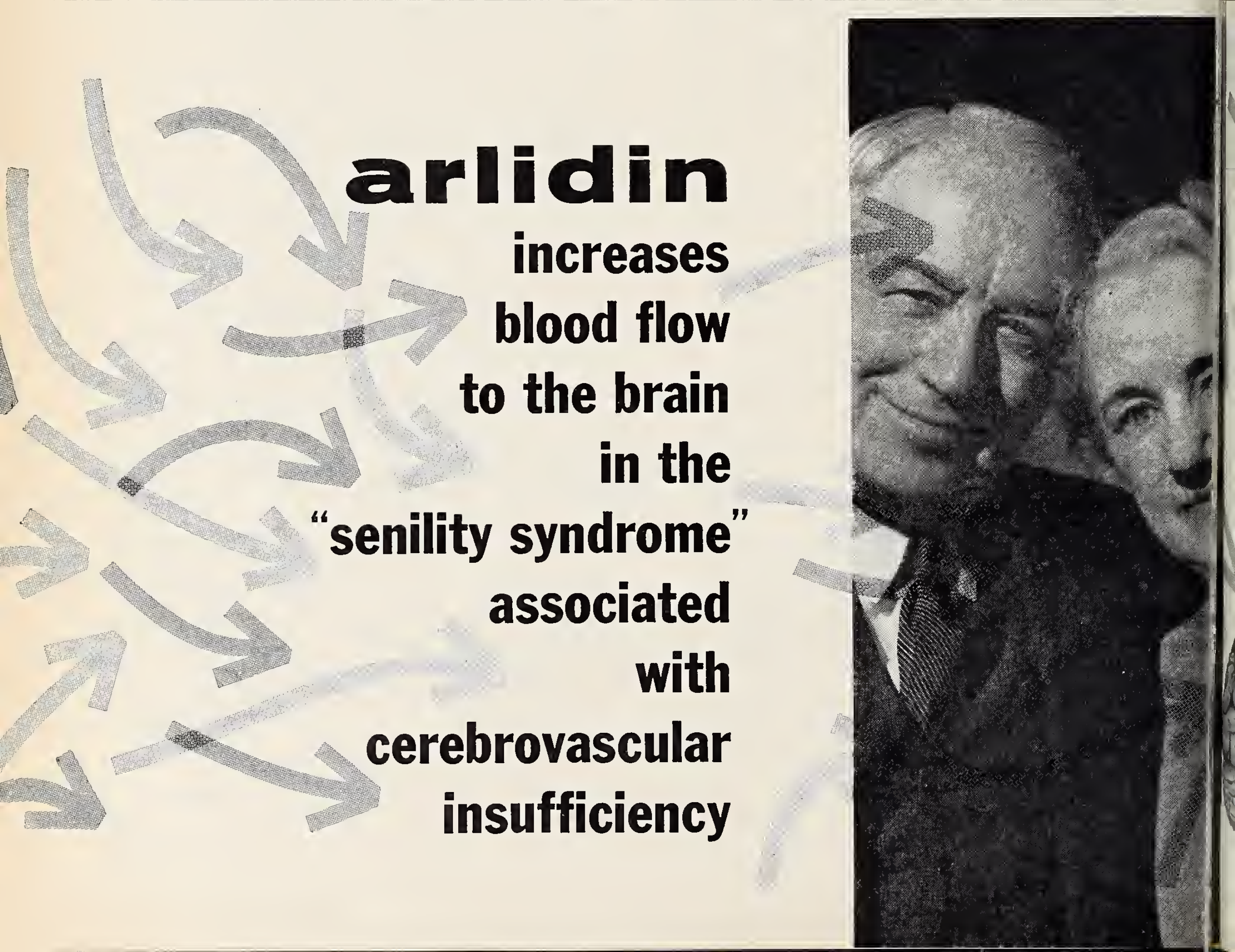
Drs. R. B. Chrisman Jr., Coral Gables, Fla.; W. L. Crawford, Rockford, Ill.; James F. Donnelly Jr., Raleigh, N. C.; Harold S. Morgan, Lincoln, Neb.; Howard A. Nelson, Greenwood, Miss. and Philip F. Williams, Bala Cynwyd, Pa.

Badly Burned Aided by Blood Of Former Victims

Transfusions of blood from donors who have recovered from burns have proved beneficial to persons in a critically burned state, three Chicago researchers have said.

A report in the October 22 issue of the *Journal of the American Medical Association* describes the use of this method of treatment in nine children burned in the 1958 Our Lady of the Angels school fire in Chicago.

The treatment is based on the premise that a burn releases a toxin, or poisonous substance, into the blood stream and that the blood of a person who has recovered from such a burn contains an antitoxic-like substance. The authors presented evidence derived from various tests indicating the existence of this toxin-antitoxin phenomenon.



The study was reported by Sol R. Rosenthal, Ph.D., M.D., James B. Hartney, M.D., and Wilma A. Spurrier, B.S., Chicago, who said their findings should be considered "preliminary" because the total effect of the blood of a recovered burn victim has not yet been determined. However, they said this method was "worthy of further investigation."

The nine children given this type of blood transfusion showed improvement within a matter of hours, they said.

"The improvement was characterized by a decrease of pain, irritability, and edema [swelling], and an increase in awareness, mobility, appetite, and ability to swallow and sleep," they said.

Dr. Rosenthal is director of Tice Laboratory, University of Illinois.

Illinois Figures Show Drop In Thyroid Disease

The over-all incidence of thyroid disease has decreased during the past 23 years, says Dr. Edson F. Fowler, Evanston, Ill.

Dr. Fowler based his conclusion on a review of all patients with thyroid disease seen at Illinois Research Hospital from 1936 to 1959.

Writing in the November *Archives of Surgery*, published by the American Medical Association, he said thyroid admissions fell from 14.8 per cent of general surgical admissions in the period 1936-40 to 5.2 per cent in the period 1956-59.

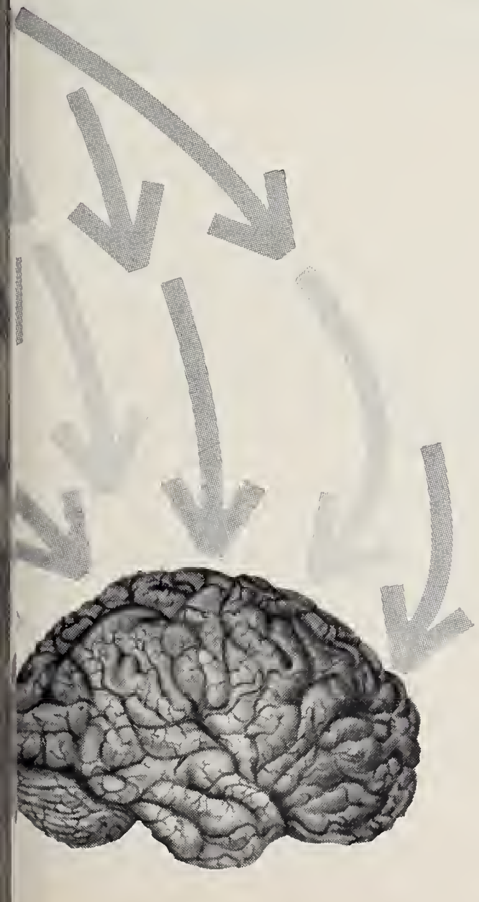
Part of the decline, he explained, was due to the introduction of iodized salt in the area and the use of drugs and radioactive iodine instead of surgery.

Among the different types of thyroid disease, the incidence of toxic diffuse goiter and toxic nodular goiter appear to have decreased while thyroiditis, nontoxic nodular goiter, and cancer of the thyroid seem to have increased, he pointed out.

The incidence of toxic diffuse goiter operated on declined from about 44 per cent of all thyroid cases between 1936-40 to about 31 per cent between 1956-59, and the incidence of toxic nodular goiter operated on declined from about 34 per cent between 1936-40 to about 11 per cent between 1956-59.

During the same period, the incidence of thyroiditis operated on increased sevenfold from 0.8 per cent to 5.6 per cent, the incidence of nontoxic nodular goiter operated on increased from 17.7 per cent to 61.8 per cent, and the incidence of cancer of the thyroid operated on increased from 2.1 per cent to 6.9 per cent.

Dr. Fowler said he believed the reduction in operations for toxic diffuse and toxic nodular goiter "indicate a true reduction in the frequency" of these types of goiter. However, he said the increase in surgery for the other three types of thyroid disease so far could not be entirely explained.



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references: 1. Madow, L.: Penn. M. J. 62:861, June 1959. 2. Stieglitz, E. J.: Geriatric Medicine, ed. 2, Philadelphia, Saunders, 1949 p. 274. 3. Winsor, T., et al.: Amer. J. Med. Sciences 239:594, May 1960. 4. Eisenberg, S.: ibid, July 1960.

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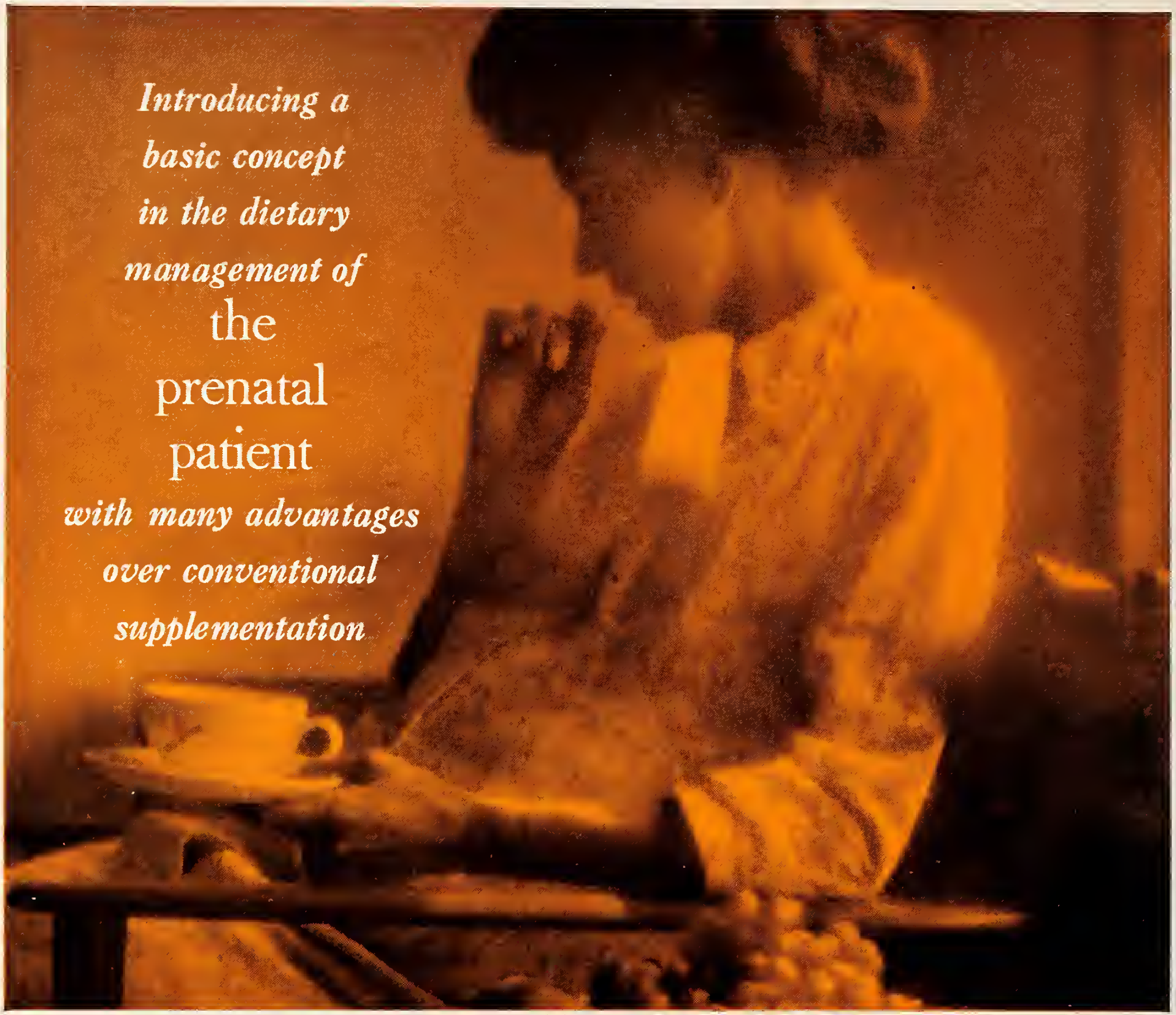
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BOOKS RECEIVED

CHOICE OF A MEDICAL CAREER, THE—Essays on the Fields of Medicine—Edited by Joseph Garland, M.D., Sc.D. (Hon.), editor, New England Journal of Medicine; Consultant Editor, British Practitioner; and Joseph Stokes III, M.D., Associate in Preventive Medicine, Harvard Medical School; Associate Editor, New England Journal of Medicine. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1961. 231 pages, $5.00.

DERMATOLOGY — Diagnosis and Treatment — Second Edition—Marion B. Sulzberger, M.D., F.A.C.P., Professor and Chairman, Department of Dermatology and Syphilology, New York University School of Medicine and New York University Post-Graduate Medical School; Jack Wolf, M.D., Attending Dermatologist to the Grand Central Hospital, New York, N. Y.; and Victor H. Witten, M.D., Associate Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School. With the Collaboration of Alfred W. Kopf, M.D., Assistant Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1961. 615 pages, $14.00.

DISC LESIONS AND OTHER INTERVERTEBRAL DERANGEMENTS—Treated By Manipulation, Traction and Other Conservative Methods. E. J. Crisp, M.D. (Cantab.), D. Phys. Med. (Lond.), Consultant Physician Emeritus in Physical Medicine, Guy's Hospital, London. The Williams & Wilkins Company, Baltimore 2, Maryland, exclusive U. S. agents, 1960. 158 pages, $3.75.

DYNAMIC PSYCHIATRY IN SIMPLE TERMS—Second Edition—Robert R. Mezer, M.D., Assistant Professor of Psychiatry, Boston University Medical School, and Associate Visiting Physician in Psychiatry, Massachusetts Memorial Hospitals. Foreword by Harry C. Solomon, M.D. Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1960. 178 pages, $2.75.

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HAEMOPOIESIS—Cell Production and Its Regulation—Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A., editors for the Ciba Foundation. Little, Brown & Company, 34 Beacon Street, Boston, Massachusetts, 1960. 490 pages, 107 illustrations, $11.00.

HEALTHY BABIES—HAPPY PARENTS—Henry K. Silver, M.D., Professor of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; C. Henry Kempe, M.D., Professor and Chairman of the Department of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; and Ruth Svibergson Kempe, M.D., formerly Chief of the Division of Mental Hygiene, Department of Public Health of the City and County of San Francisco, California. Foreword by Grover F. Powers, M.D., Professor Emeritus of Pediatrics, Yale University School of Medicine. McGraw-Hill Book Company, Inc., The Blakiston Division, 330 W. 42nd Street, New York 36, N. Y., 1960. 228 pages, $4.95.

INSTRUCTIONAL COURSE LECTURES—Volume XVII, 1960—The American Academy of Orthopaedic Surgeons—Fred C. Reynolds, M.D., St. Louis, Missouri, Editor. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Missouri, 1960. 421 pages, $18.50.

MEDICAL FORMS AND PROCEDURES FOR INDUSTRY—Herbert L. Herschensohn, M.D., Medical Director, Douglas Aircraft Company, Inc., Santa Monica, California, and Associate Clinical Professor of Industrial Medicine and Associate Clinical Professor of Preventive Medicine and Public Health, University of California at Los Angeles, Los Angeles, California. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1961. 192 pages, $8.50.

NEUROVASCULAR COMPRESSION SYNDROMES OF THE SHOULDER GIRDLE—Louis M. Rosati, M.D., and Jere W. Lord, M.D., both Professors of Clinical Surgery, New York University Post-Graduate Medical School; and Attending Surgeons, Bellevue and University Hospitals, New York. (Modern Surgical Monographs 3, I. S. Ravdin, M.D., Editor in Chief; Richard H. Orr, M.D., Consulting Editor.) Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 168 pages, $7.25.

PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE, THE—A Text in Applied Physiology—Seventh Edition—Charles Herbert Best, C.B.E., M.A., M.D., D. Sc. (Lond.), F.R.C.S., F.R.C.P. (Canada), Professor and Head of Department of Physiology, Director of the Banting-Best Department of Medical Research, University of Toronto; and Norman Burke Taylor, V.D., M.D., F.R.S. (Canada), F.R.C.S. (Edin.), F.R.C.P. (Canada), M.R.C.S. (Eng.), L.R.C.P. (Lond.), Professor of the History of Medicine and Medical Literature, University of Western Ontario, London, Canada; formerly Professor of Physiology, University of Toronto. The Williams & Wilkins Company, 428 East Preston Street, Baltimore 2, Maryland, 1961. 1554 pages, $16.00.

PSEUDOMONAS AERUGINOSA INFECTIONS—Claude E. Forkner, Jr., M.D., Assistant in Medicine, Cornell University Medical College, New York, N. Y.; formerly, Assistant in Medicine, Harvard Medical School; formerly, Clinical Associate, General Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland. Modern Medical Monographs 22 — Irving S. Wright, M.D., editor-in-chief, and Richard H. Orr, M.D., consulting editor. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1960. 104 pages, $5.25.

SCIENCE PROJECTS HANDBOOK—Edited by Shirley Moore, Science Clubs of America. Paper Back Book. Order from: Science Service Inc., 1719 N St. N.W., Washington 6, D. C., or Dept. 445, Ballantine Books, Inc., 101 Fifth Avenue, N. Y. 3, N. Y., 1960. 253 pages, 50 cents.

YEAR BOOK OF DRUG THERAPY, THE (1960-1961 Year Book Series)—Edited by Harry Beckman, M.D., Chairman, Departments of Pharmacology, Marquette University Schools of Medicine and Dentistry; Consulting Physician, Milwaukee County General and Columbia Hospitals, Milwaukee, Wisconsin. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1961. 587 pages, $8.50.

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In initial clinical studies, more than 50 clinicians formally evaluated Tandearil in over 2,800 patients.

Chronic arthritic conditions: Long-term therapy with Tandearil in arthritides and allied disorders was initially evaluated in 1,216 patients; 589 with rheumatoid arthritis; 107 with rheumatoid spondylitis; and 520 with osteoarthritis. Notable success was reported in rheumatoid spondylitis; 80 per cent of patients showed marked subjective improvement or complete remission, and less than 6 per cent showed no beneficial effect. Significant improvement was clearly demonstrated in patients with osteoarthritis and rheumatoid arthritis. Chronic rheumatic disorders respond to Tandearil with resolution of inflammation, improvement of function and relief of pain. The speed of response in different rheumatic disorders varies but, in general, symptomatic improvement is evident shortly after therapy has been instituted. In all chronic conditions, relief of inflammation is supplemented by improvement in appetite, sleep, weight gain and in increased feeling of well-being. Improvement, once established, can usually be maintained on minimal dosage. Dosage should therefore be reduced to minimum effective levels as soon as possible.

Severe forms of a variety of local inflammatory conditions: Among patients studied initially, there were 1,640 subjects with acute conditions such as gout, thrombophlebitis, painful shoulder (bursitis, peritendinitis, capsulitis, and acute arthritis), post-surgical and post-traumatic inflammation. In almost all indications where a sufficiently large group of cases were available for evaluation, the overwhelming majority could be classified as "complete remission" or "marked response."

Satisfactory response can usually be achieved with Tandearil in a wide variety of severe, localized conditions within a short, two- to ten-day course of treatment.

INDICATIONS

The leading indications in which Tandearil affords relief are the following:

Rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, osteoarthritis, gout; painful shoulder (peritendinitis, capsulitis, bursitis, and acute arthritis of that joint); acute superficial thrombophlebitis; severe forms of a variety of local inflammatory conditions (see below).

In the chronic arthritides, Tandearil can be expected to relieve pain and improve function in a majority of cases. Improvement, once obtained, can usually be maintained on low dosage. In benign conditions such as simple osteoarthritis, the use of Tandearil should be restricted to acute exacerbations and to patients who do not respond to simple analgesics.

It is the clinical impression of most observers that Tandearil exerts beneficial effects in many cases of superficial thrombophlebitis. Tandearil apparently relieves local pain, an action dependent upon its specific anti-inflammatory activity, and distinct from its antipyretic or central analgesic properties. Tandearil should not be used as a substitute for anticoagulant therapy to control potential embolization especially with deep vein thrombosis.

Tandearil continues under clinical investigation in a wide variety of inflammatory conditions. However, it is *not* indicated for the treatment of trivial disturbances, and many of the disorders for which it has been found useful must be considered experimental indications pending further evaluation.

In inflammatory conditions not involving prolonged or fatal disease, Tandearil should be used only when the severity of the condition balances the potential toxicity. With short periods of therapy, this potential is substantially reduced. Effective control of postoperative, posttraumatic and some types of infectious inflammation with short courses (2 to 7 days) of Tandearil therapy has been reported. Treatment of such acute inflammatory conditions with Tandearil, using all recommended precautions, is advisable under the following circumstances:

a) when the inflammatory process involves a closed space or produces pressure on vital organs or seriously embarrasses normal function,

b) when severe pain due to inflammation is not readily controlled by the usual analgesics,

c) where the success of a surgical procedure is jeopardized by inflammation,

d) when severe disability due to inflammatory reaction is not relieved by conventional measures. In all such cases, customary specific measures such as antibiotics, incision and drainage, etc., should be instituted concomitantly when indicated.

DOSAGE

Dosage Regimen in Chronic Inflammatory Conditions such as Rheumatoid Arthritis, Rheumatoid Spondylitis, Osteoarthritis, and Psoriatic Arthritis: The initial daily dosage in adults ranges from 300 mg. to 600 mg. divided into three or four equal doses. In most instances, it is unnecessary to exceed 400 mg. daily to ensure maximum therapeutic response.

A trial period of one week of therapy is considered adequate to determine the therapeutic effect of the drug. In the absence of a favorable response, therapy should be discontinued.

Maintenance Dosage: When improvement is obtained, the dosage should be promptly decreased to the minimum effective level which gives relief. This maintenance dosage should not exceed 400 mg. per day because of possible cumulative toxic effects. Satisfactory effect is often achieved with as little as 100 to 200 mg. daily.

Dosage Regimen in Acute Gouty Arthritis: The treatment of acute gouty arthritis calls for a somewhat different dosage regimen. In this condition, best results are obtained from an initial dose of 400 mg., followed by 100 mg. every four hours until articular inflammation subsides, usually within four days. This dosage should not be continued yond a period of one week.

Dosage Regimen in Acute Superficial Thrombophlebitis: Best results have been obtained with a dosage of 600 mg. per day in divided doses for the first 2 or 3 days, followed by a reduction to 300 mg. daily. Usual duration of treatment is 5 to 7 days and only rarely must therapy be extended beyond 10 days.

In Severe Forms of a Variety of Acute Local Inflammatory Conditions: Satisfactory therapeutic results can usually be achieved with a short 2 to 7 day course of therapy. Relief of pain and resolution of swelling, redness and induration is frequently achieved by these limited periods of treatment. In general, 400 to 600 mg. daily in divided doses for the first 2 or 3 days is recommended. Subsequent doses of 300 mg. daily are usually adequate.

In selecting the appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age, and any other factors that may influence his response to the drug.

To minimize gastric upset, Tandearil should always be taken immediately after food or with a full glass of milk.

Duration of treatment: The action of Tandearil is usually manifest by the third to fourth day of treatment. It is not advisable, therefore, to continue trial therapy with Tandearil beyond a week in the absence of a favorable result.

In the treatment of transient conditions such as painful shoulder, medication should be discontinued a few days following relief of symptoms; in the event of relapse, therapy is resumed as needed to control symptoms. In the treatment of more chronic disorders, medication may be continued at the minimal effective level required to maintain relief and freedom from acute exacerbations. Medication should be discontinued whenever toxic symptoms appear or whenever blood studies indicate any significant reduction in the formed elements.

SIDE EFFECTS

Tandearil is a potent drug, and its misuse can lead to serious results. Detailed information on its use should be considered before undertaking therapy.

The side reactions most commonly encountered include nausea, edema and drug rash. Frequently, these undesirable effects can be avoided or minimized by reduction of dosage, but in more severe cases the drug should be discontinued.

Electrolyte balance: Tandearil has a definite tendency to produce sodium retention and hence, edema, particularly in the older age group of patients. Slight or moderate edema per se is not necessarily a signal to cease therapy, since this complication is usually self-limiting and invariably disappears on cessation of treatment. Swelling of the ankles or face may often be prevented or minimized by withholding salt from the diet, or by reduction of dosage. Diuretics may be used if necessary. In elderly patients, however, and in patients with hypertension, cardiac defect or renal dysfunction, Tandearil should be given with utmost caution, and the appearance of clinical edema in such cases is an indication to discontinue treatment.

Nausea and vomiting are observed more frequently in patients who are forewarned about the possibility of such reactions, and this psychic factor should be kept in mind when Tandearil is first prescribed. It is recommended that the patient be instructed to take the medication immediately after meals or with a glass of milk in order to minimize gastric upset.

Although Tandearil has been found to be better tolerated than Butazolidin, reactivation of latent peptic ulcer has occurred. A detailed history should be obtained with special emphasis on previous gastrointestinal disturbances. When

(Continued on Page 66)

Artificial Kidney Fights Congestive Heart Failure

The mechanical kidney has become a weapon against heart disease, according to four New York City physicians.

An article in the *Journal of the American Medical Association* describes the role of the artificial kidney in saving the life of a 45-year-old woman suffering severe congestive heart failure.

It marks another triumph for the mechanical kidney, originally designed to substitute for malfunctioning kidneys and later found to be useful in treating poisoning victims. The artificial kidney, which duplicates the work of the kidney by filtering waste products from the blood, can remove poisons from the body much faster than the human kidney.

Drs. William M. Lemmon, Teruo Hirose, Robert A. O'Connor, and Charles P. Bailey, New York Medical College, Metropolitan Hospital Center, said the "intentional use of the artificial kidney for the treatment of congestive cardiac failure, per se, has not been described previously."

Congestive heart failure is a disorder of the heart's function characterized by the accumulation of blood and fluids at various sites in the body. Surgical intervention is not possible unless the excess water can be removed, the authors explained. While this can be accomplished with most patients by using normal procedures, they said, occasionally there are patients who do not respond. Death "not infrequently" is the inevitable result among these patients, they said.

The patient in the case reported fell into this category. The failure to remove the excess fluid prevented an operation to correct her heart defect (mitral stenosis). It was then decided to try the artificial kidney.

They found that several pounds of fluid could be removed through use of the device and that after its use the patient became responsive to previously ineffective measures.

Following the success of this treatment, an operation was performed and the patient "was cured completely," the authors reported.

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Kidney Function Tests in Children

CHESTER C. WINTER, *M.D.*, Los Angeles

• Total renal function is best determined by urinalysis and serum creatinine determination. This may be supplemented, under controlled conditions, by fractional urinary phenosulfonphthalein clearance. The excretory urogram, while invaluable as a diagnostic test, lacks quantitative value as a function test.

Until recently, individual renal function determinations depended upon the difficult and tedious cystoscopy and bilateral ureteral catheterization and skilled laboratory techniques. Frequently the necessity of anesthesia artificially depressed kidney function.

Since 1956, the radioisotope kidney function test has offered an external, innocuous means of assessing individual renal blood flow, function and drainage plus evaluation of vesico-ureteral reflux. The method has distinct advantages for evaluation of pediatric urological problems.

KIDNEY FUNCTION TESTS may measure total or individual kidney function. The former is assessed more easily and is the usual evaluation. Individual kidney function remains a matter of speculation until procedures peculiar to the specialty of urology are used. This presentation is concerned with an evaluation of certain standard renal function tests and a description of an isotope technique for surveying individual kidney function.

Standard Methods of Determining Total Renal Function

Total kidney function screening is ordinarily performed by means of urinalysis and determination of blood urea nitrogen (BUN) or nonprotein nitrogen (NPN). In most instances, normal values imply normal total function and the kidneys may be dismissed from further investigation. An elevation of urea nitrogen, however, bears further observation, although the abnormal value may merely reflect conditions entirely unrelated to the kidneys, such as dehydration, high protein intake, gastrointestinal bleeding or liver dysfunction. Less commonly used tests include serum creatinine, urinary phenolsulfonphthalein excretion and excretory urography. The latter, while of great value for visualization of renal structure and therefore of diagnostic value, is frequently inaccurate as an index of total renal function. This was explained and illustrated in a recent study,[4] the intravenous urogram having been shown to be especially inaccurate as an individual renal function index in one-third of the patients when a sufficient number of other tests were available for comparison. The explanation is based upon the modern use of huge doses of heavily iodinated contrast media that produce excellent pyelograms indiscriminately, regardless of certain degrees of depression of function. Therefore, normal excretory urograms imply that both kidneys are capable of at least moderate function, although not necessarily equal quantitatively. On the other hand, if the contrast medium cannot be seen in urograms, this usually (but not always) signifies poor total renal function.

Phenolsulfonphthalein (PSP) determinations give a more quantitative answer if the bladder can be emptied at each collection period. The inability of the patient to cooperate due to age or illness may make this test inapplicable without catheterization. In addition to total kidney function, some idea as to the presence of residual bladder urine may be for-

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From the Department of Surgery, Division of Urology, University of California Medical Center, Los Angeles 24.

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Presented before the Section on Urology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

mulated by a graphic representation of the fractional values of PSP excretion.[2]

Serum creatinine determinations offer the most reliable guide to total kidney function. The amounts do not fluctuate secondary to extra-renal disorders and normally should remain under 1 mg. per 100 cc. in pediatric patients. The per cent of renal dysfunction can be estimated readily and with confidence by dividing the value obtained into 1. There is no increased hardship on the laboratory if this test is performed routinely in large numbers in place of the BUN or NPN determinations.

Standard Methods of Determining Individual Kidney Function

Until 1956 two methods of studying individual kidney function were available. One included roentgen visualization of the renal structure through use of excretory intravenous pyelography (IVP) and/or aortography.[3] An excretory urogram leads to diagnostic evaluation of the renal mass, collecting system and drainage apparatus of the upper urinary tracts. Adequate renal concentrating ability is a necessary prerequisite. Considerable value is placed in the appearance time and concentration of contrast medium in estimating the degree of kidney function. Renal arteriography is indispensable in outlining disturbances in the renal arterial network. Cystography is utilized to reveal vesico-ureteral reflux of urine.

The second method includes cystoscopy and ureteral catheterization.[5] Pediatric patients pose special problems of small, delicate urinary structures and usually the necessity of general anesthesia. Not only can the renal calyces, infundibula, pelves and ureters be outlined by retrograde urography, but urine can be collected from each kidney. The rate of urine excretion can be measured, and also various dye and clearance tests of glomerular-tubular functions and renal blood flow plus osmolarity and electrolyte determinations can be carried out. The results depend upon the ability of the cystoscopist to properly place catheters of adequate caliber, plus the good fortune of adequate urine output and prevention of leakage into the bladder. While dye excretions are estimated with relative ease, the clearance tests (inulin, para-aminohippurate, Diodrast, creatinine, mannitol) require skilled technical and laboratory facilities not generally available. Occasionally ureteral catheterization is impossible and subjective evaluation of the appearance time and concentration of indigo carmine at the ureteral orifices may be the only available means of estimating renal function. This assumes there is no ureteral obstruction and cystoscopy is possible.

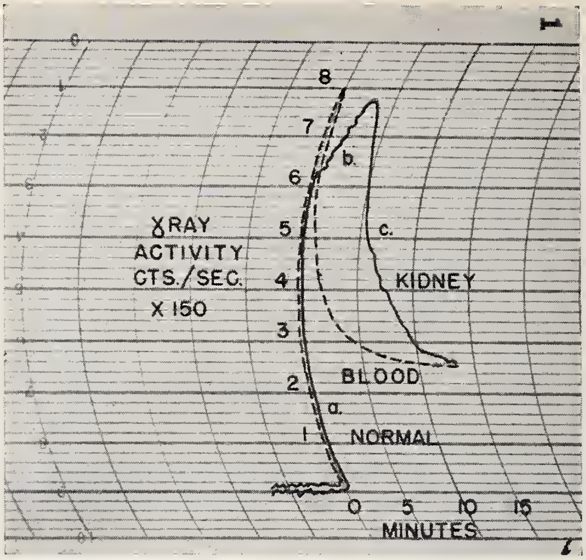


Figure 1.—Simultaneous renogram and blood clearance records show that while the blood is being cleared rapidly, the kidney is actively picking up the radioactive agent as indicated by increase in counts of gamma ray activity per second (γ ray activity cts./sec.).

A New Kidney Function Test

In 1956 a radioisotope technique of testing individual kidney function was introduced and called the radioisotope renogram.[6] The exact location of each kidney is determined by a plain roentgenogram and the patient is placed in the sitting or prone position. A minute amount of contrast medium, tagged with I^{131},[7] is injected intravenously according to a prescribed dosage schedule. At the present time, Hippuran-I^{131} seems the ideal test agent. As the material reaches the kidneys it is selectively removed from the circulation primarily by the renal tubules in a highly efficient manner. A scintillation probe is placed over each kidney posteriorly and the radiation signal is detected and transmitted through electronic rate meters to recorders, where the level of renal radioactivity is transformed into a permanent tracing, immediately available for interpretation. The characteristic normal tracing (renogram) is completed in 10 to 20 minutes and is composed of three segments: (a) An initial spike representing renal vascular capacity, (b) a secondary rise showing degree of tubular cell function and (c) the terminal fall indicative of the ability of the kidney to evacuate urine (Figure 1). In abnormal situations tracings characteristic of decreased arterial flow, tubular dysfunction or urinary stasis are obtained. Experience with over 1,600 renograms shows the accuracy of the isotope test to be comparable to that of the more difficult dye and clearance tests when it is performed properly. There the similarity ceases, since the renogram requires no special preparation, anesthesia, medication, internal manipulation of instruments,

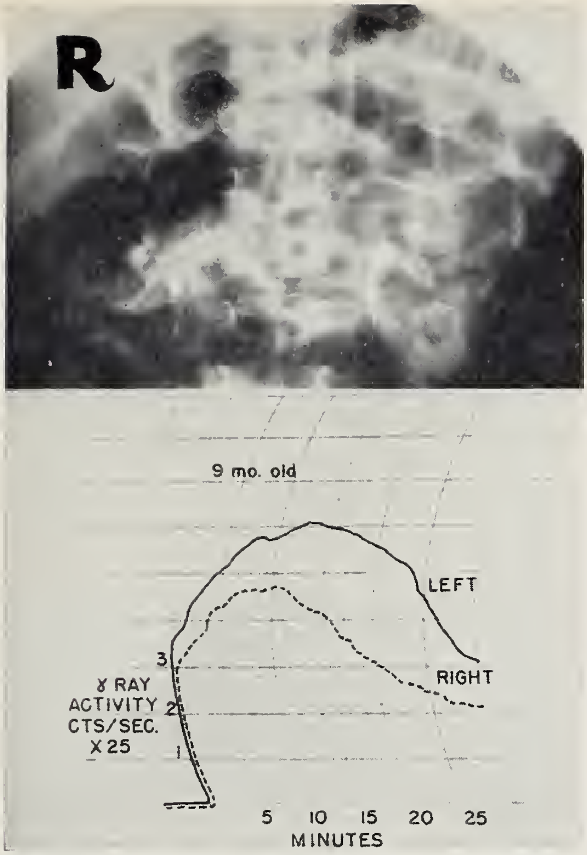


Figure 2 (Case 1).—The intravenous urogram appears normal, although too sketchy for diagnostic accuracy. The radioisotope renogram depicts bilateral normal vascularity, function and drainage of the kidneys.

special laboratory facilities or a long procedure. Furthermore, the renogram can be repeated at frequent intervals, it does not predispose to urinary infections or trauma, and the test agent is innocuous. Adherence to a time-proven technique described elsewhere should prevent artifactual tracings.[9]

As a supplement to the renogram, the radioisotope reflux test was developed.[10] By placing the patient supine with a radioisotope in the bladder and scintillation probes over the kidneys, tracings indicative of vesico-ureteral reflux of urine can be obtained when the condition exists. As the amount of radiation received is negligible, this method is favored over the usual roentgenological practices. Furthermore, with the delayed cystography technique, it is possible for so much absorption of contrast medium by the bladder to occur that renal secretion can cause the pyeloureterograms to have an appearance compatible with false reflux.

ILLUSTRATIVE REPORTS OF CASES

CASE 1. A 9-month-old girl with retarded growth compatible with renal dysfunction had serum creatinine of 0.8 mg. per 100 cc. and BUN of 9 mg. An intravenous urogram (Figure 2) was interpreted as consistent with prompt function on both sides but was too sketchy to reveal renal size or structure or evidence of disease. Since the result of urinalysis was normal, it seemed desirable to avoid cystoscopy and retrograde pyelography if possible. A radioisotope renogram was made (Figure 2) and found normal, supplying the desired information about the kidneys.

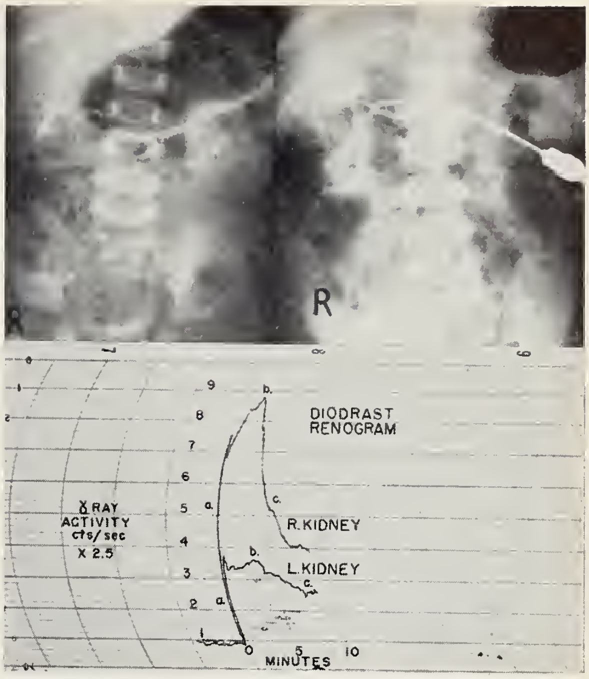


Figure 3 (Case 2).—The intravenous urogram outlines a normal right kidney. The left kidney is not visualized. The aortogram (upper right) shows a normal vascular pattern to the right kidney. The left renal artery and its branches are not revealed. The renogram is normal on the right but shows decreased vascularity and delayed and decreased function on the left. Neither of the latter were reflected accurately by excretory urography or aortography.

CASE 2. The patient was an 18-month-old boy with hypertension and pyuria. Intravenous pyelography and aortography revealed only one functioning kidney (Figure 3). Indigo carmine appeared normally from the right ureteral orifice but faintly, and delayed from the left. Retrograde pyelograms were normal. The right renogram (Figure 3) was normal but decreased vascularity and function existed on the left (illustrating its value as a screening test among hypertensive persons).[11] Left nephrectomy was done and at last report, three and a half years later, the patient was well.

CASE 3. An 8-year-old girl with hypertension, had right hydronephrosis despite previous pyeloplasty. Aortograms (Figure 4) showed two left renal arteries but only one right renal artery, supplying the upper pole. A renogram (Figure 4)

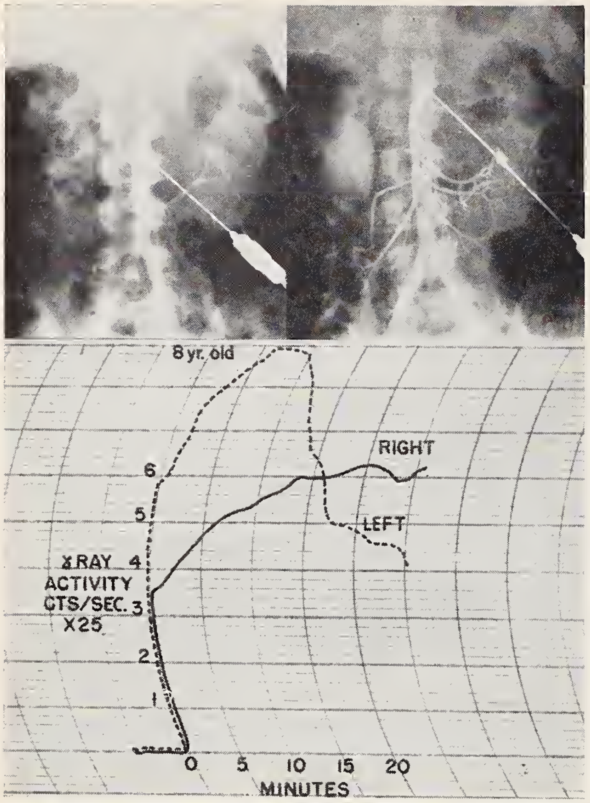


Figure 4 (Case 3).—With the needle lower in the aorta (on the left) only one renal artery is depicted (to lower pole of left kidney). When the aortogram needle is higher up (as on the right), two additional renal arteries are visualized, one to upper pole of each kidney. In the background, a right hydronephrosis can be seen. The left renogram is normal. Both vascularity and drainage are impaired on the right side.

showed a normal left tracing but decreased vascularity and obstruction on the right. Following right nephrectomy, the patient remained well up to the time of last report one year later.

Case 4. An 8-year-old girl with recurrent urinary infection, had a normal excretory urogram and the chemical contents of the blood were within normal limits. Cystography revealed left vesico-ureteral reflux. This was corrected surgically. A postoperative renogram and isotope reflux test (Figure 5) showed no obstruction or reflux, as was borne out by similar roentgenological studies.

Case 5. A 16-year-old girl had bilateral uretero-ileal-cutaneous urinary diversion (Bricker procedure) for neurogenic urinary incontinence. The operation had made cystoscopy and ureteral catheterization impossible. Postoperative renograms showed left upper urinary stasis (Figure 6) corroborated by the excretory urograms (Figure 6). A subsequent renogram revealed less stasis. This sequence shows the application of serial renograms for postoperative followup.

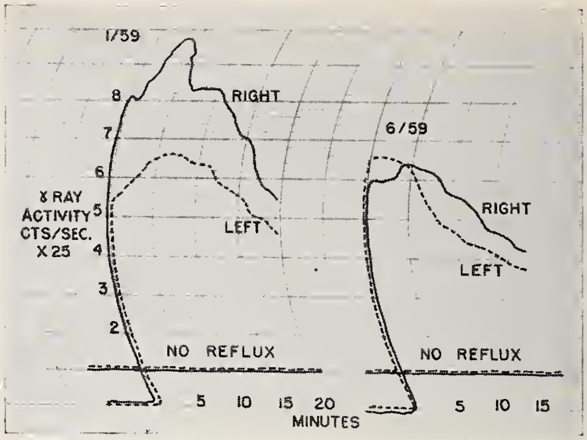


Figure 5 (Case 4).—Postoperative renograms, six months apart, show no impairment of drainage bilaterally. Reflux tracings are superimposed over the bottom of the renograms. They are straight lines, showing no rise as would occur with reflux.

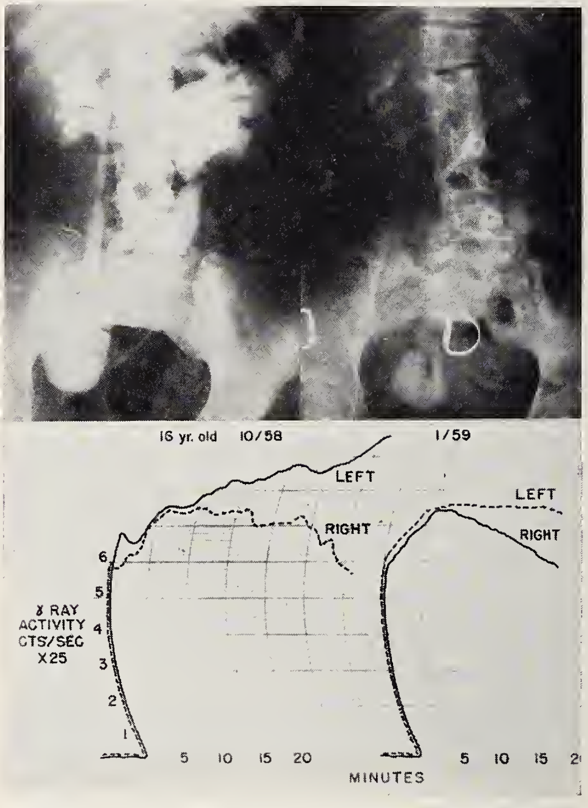


Figure 6 (Case 5).—The first postoperative renogram on the left shows pronounced left and mild right renal stasis. Three months later the renogram on the right showed improvement in renal drainage bilaterally. The early postoperative retrograde (left) and excretory urogram (right) show hydronephrosis bilaterally, more pronounced of the left kidney.

Case 6. A 10-year-old girl with a solitary left kidney had a serum creatinine of 4.0 mg. per 100 cc. Intravenous urography was contraindicated. Left antegrade pyelography and cystography showed ves-

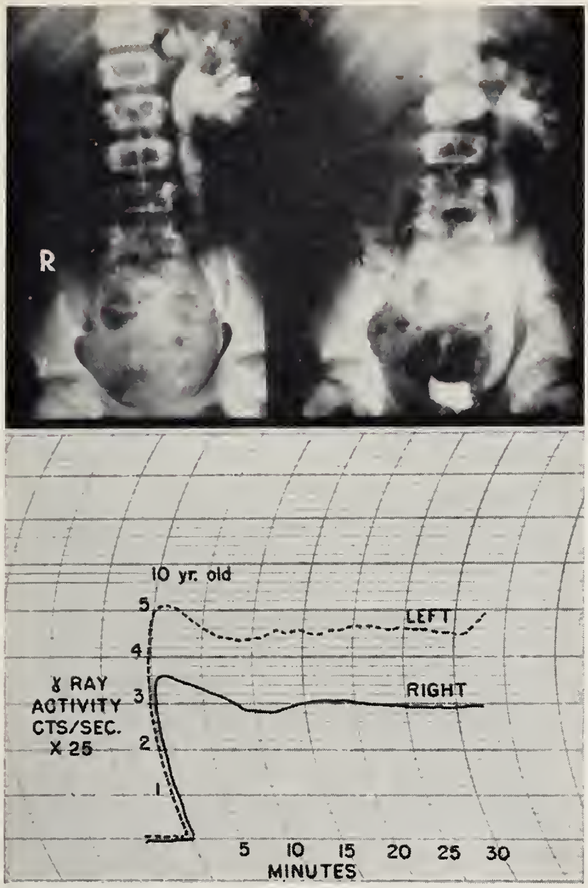


Figure 7 (Case 6).—Left antegrade pyeloureterography shows hydronephrosis and hydroureter. To the right can be seen the patient's cystogram revealing decided vesicoureteral reflux. The renogram shows lack of functional segments early but stasis is revealed by late rise in the tracings (more so for left kidney).

ico-ureteral reflux and left hydronephrosis and ureterectasia (Figure 7). The renogram (Figure 7) revealed a nonfunctioning or absent right kidney and a poorly functioning left kidney with stasis and azotemia (lack of sufficient drop in terminal right tracing).

Ohio State University Health Center, 410 West Tenth Avenue, Columbus 10, Ohio.

REFERENCES

1. Goldman, R.: The clinical evaluation of renal function, Calif. Med., 85:376, Dec. 1956.

2. Smith, D. R.: Estimation of the amount of residual urine by means of the phenolsulfonphthalein test, J. Urol., 83:188, Feb. 1960.

3. Walters, R. C., and Goodwin, W. E.: Aortography and pneumography in children, J. Urol., 77:323, Feb. 1957.

4. Winter, C. C.: The excretory urogram as a kidney function test, J. Urol., 83:313, March 1960.

5. Winter, C. C., Maxwell, M. H., Rockney, R. E., and Kleeman, C. R.: Results of radioisotope renogram and comparison with other kidney function tests among hypertensive patients, J. Urol., 82:674, Dec. 1959.

6. Winter, C. C.: A clinical study of a new renal function test: The radioactive Diodrast renogram, J. Urol., 76:182, Aug. 1956.

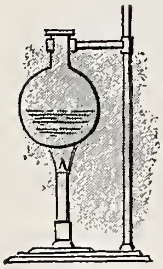
7. Winter, C. C., and Tapin, G. V.: A clinical comparison and analysis of radioactive Diodrast, Hypaque, Miokin and Urokon renograms as tests of kidney function, J. Urol., 79:573, March 1958.

8. Winter, C. C., Nordyke, R., and Tubis, M.: Clinical experience with Hippuran-I^{131}, a new test agent for the radioisotope renogram, In press, J. Urol.

9. Winter, C. C.: Further experiences with the radioisotope renogram, Am. J. Roentgenol. and Radium Therapy, 82:862, Nov. 1959.

10. Winter, C. C.: A new test for vesico-ureteral reflux: External technique using radioisotopes, J. Urol., 81:105, Jan. 1959.

11. Winter, C. C.: Unilateral renal disease and hypertension: Use of the radioactive Diodrast renogram as a screening test, J. Urol., 78:107, Aug. 1957.



Medical Problems of Amputees

VERNE T. INMAN, *M.D., Ph.D.*, GILBERT H. BARNES, *M.D.*,
S. WILLIAM LEVY, *M.D.*, HENRY E. LOON, *M.D.*,
and H. J. RALSTON, *Ph.D.*, San Francisco

• The initial trauma of a major amputation and the medical disorders secondary to it are being studied at the Biomechanics Laboratory. Problems that arise from amputation and from the replacement of the limb by a prosthetic device are complex but interrelated, and approaches to study on basic, applied and clinical levels must be integrated.

Three studies carried on at the Biomechanics Laboratory are described in this paper.

In the field of amputation operations, it is believed that certain osteoplastic and myoplastic techniques, along with protection for nerve stumps and measures to provide optimum circulatory conditions, may restore biological and mechanical function to a greater degree than is possible with present procedures.

From studies of the expenditure of energy during locomotion with and without assistive devices and during therapeutic exercise, it was found that crutch-walking is metabolically much more costly in energy for the amputee than walking with the suction-socket prosthesis; through these studies, it will be possible to define criteria for maximum work loads for disabled persons.

In dermatological studies, although there are still unsolved problems, successful methods of treatment have been developed for certain bacterial and fungus infections, contact dermatitides and disorders resulting from edema.

Problems that result from a major amputation fall into two categories: Those that are directly related to the amputation, such as pain, circulatory disorders, and secondary skeletal and muscular changes, and those that arise from the attempt to restore function by means of a prosthetic device, such as skin disorders and demands on energy. Therefore, the responsibility of the physician extends beyond mechanical removal of the extremity. It is obvious that he must understand the immediate physiological effects of the surgical operation, but he must also be aware of the impact of the prosthesis on the stump and of the mechanics of the prosthesis itself. All these factors affect each other, and the many problems they give rise to are interrelated and must be studied as such. These problems can be solved only by experts in the various fields working together to achieve rehabilitation of the whole amputee.

Only a few of these problems can be discussed here; therefore, aspects of importance in three areas have been selected: Improvements in surgical procedures, the question of energy expenditure, and problems of effects of the prosthesis on the skin.

TECHNIQUES OF AMPUTATION

Amputation is often the last of a long series of procedures which have proved ineffectual, and the surgeon may often feel the "defeat" that this implies. He may tell the patient that amputation has to be performed to save his life and that modern techniques are such that good prosthesis is virtually assured. With that, he may consider the case closed. For the patient, on the other hand, a new chapter—often including new problems and miseries—begins. Besides the inevitable loss of function that results from amputation, a series of biological changes take place in his body that are also an inevitable consequence of the partial or total loss of the limb. Still other problems become apparent when fitting and use of an artificial limb are considered.

Thus the goal of the amputating surgeon should be to restore as far as possible the previous normal functions—both mechanical and biological—not only in the residual extremity but also in the whole body. It may be asked whether surgeons doing such operations are aware of all the problems that occur after amputation and whether they consider them important enough to justify adaptations or changes in amputation techniques.

Over the past 150 years a number of surgeons have attempted to develop techniques that would result in more functional amputation stumps. Many more or less complicated procedures have been advocated, tried, and then discarded. Modern textbooks still recommend the classic method: Simple transection of the bone, more distal sectioning of

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From the Biomechanics Laboratory and the departments of Orthopedic Surgery, Dermatology and Physiology, University of California Medical Center, San Francisco 22.

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the musculature, and formation of one or two skin flaps to cover the distal surface of the bone.

In the Biomechanics Laboratory, we have studied the problem from the point of view of functional loss and biological changes. Our studies have enabled us to set up a number of criteria which, we believe, should bring us closer to the goal of a biologically healthy and functional amputation stump.

Let us review some of the undesirable changes that take place as a result of a standard amputation and consider some ways in which they may be avoided.

The cut end of the bone suffers from avascular necrosis. If, as is customary, no weight-bearing is provided along the axis of the bone (that is, if the amputee bears his weight on some proximal portion of the skeleton rather than distributed over the whole surface of the stump). osteoporosis of disuse results. Proximal joints show thinning of the joint cartilage. Part of the roof of the acetabulum eventually becomes sclerotic. Particularly in children, bones proximal to the amputated bone do not develop maximally, and deformities such as compensatory scoliosis are common.[6]

These changes can be minimized or prevented by an osteoplastic amputation, which provides a good weight-bearing stump. In this procedure. the cut distal surface of the bone is covered with a bone flap. We have tried various types and have had some difficulties with flaps made of a solid piece of bone. Most satisfactory seems to be the procedure developed by the Hungarian surgeon Ertl,[5] who made a flap of periosteum to which chips of bone remained attached (Figure 1). A satisfactory weight-bearing surface is achieved because this material is highly osteogenic and a solid bone cover, or, in the case of the below-knee amputation, a bridge between the tibia and fibula develops. In the latter case, the residual fibula is also stabilized (Figure 2).

In the classic amputation, the belly of the muscle is cut transversely and the residual muscle is allowed to retract. The result is lessening of speed, amount and effective range of shortening; also, atrophy and fatty degeneration may set in below the area of the proximal attachment, creating extremely poor physiological conditions for work.

In a mid-thigh amputation, for example, the muscle groups important for locomotion that are affected are the adductors, the hamstrings, the quadriceps and the iliotibial tract. The hamstrings provide us with a good illustration of the results of the classic amputation: In normal walking, the hamstrings help stabilize the pelvis in the anteroposterior plane and, during swing phase, decelerate the leg just before maximum extension. When the hamstrings are transected and allowed to retract, the energy saved by this function of deceleration is lost. After amputation, the hamstrings often attach themselves to the bone at their distal ends. When this occurs with too little tension, pressure of the prosthetic ischial seat on the ischial tuberosity produces pain; when this occurs with considerable tension or when the muscles are highly developed, the tuberosity is forced off the ischial seat.

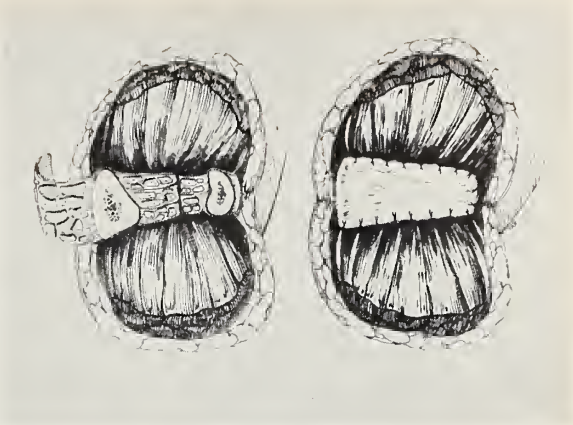

Figure 1.—Ertl's osteoplastic procedure for below-knee amputation. (Modified from *Chirurg.*[5])

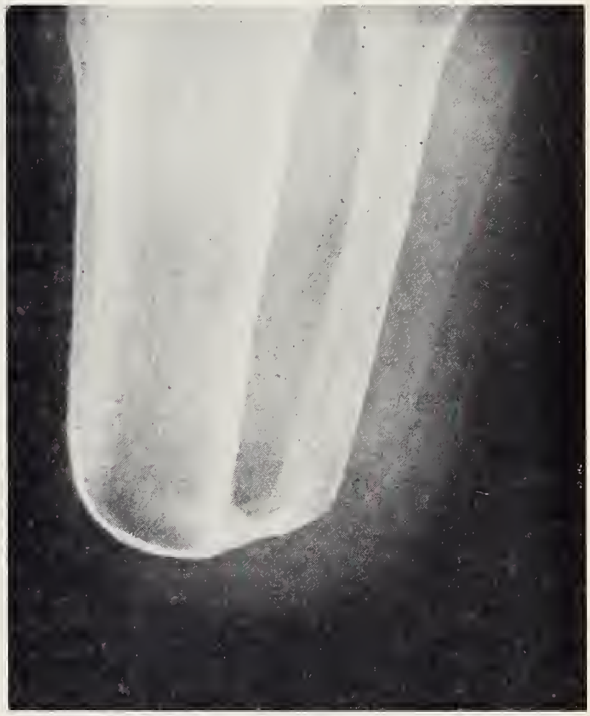

Figure 2.—Roentgenogram showing tibiofibular synostosis resulting from osteoplasty (Ertl procedure).

Thus, muscles severed during amputation should be anchored distally to the bone by suturing to the periosteum: if they are not, much of their strength will be lost, a prosthetic device cannot be fitted satis-

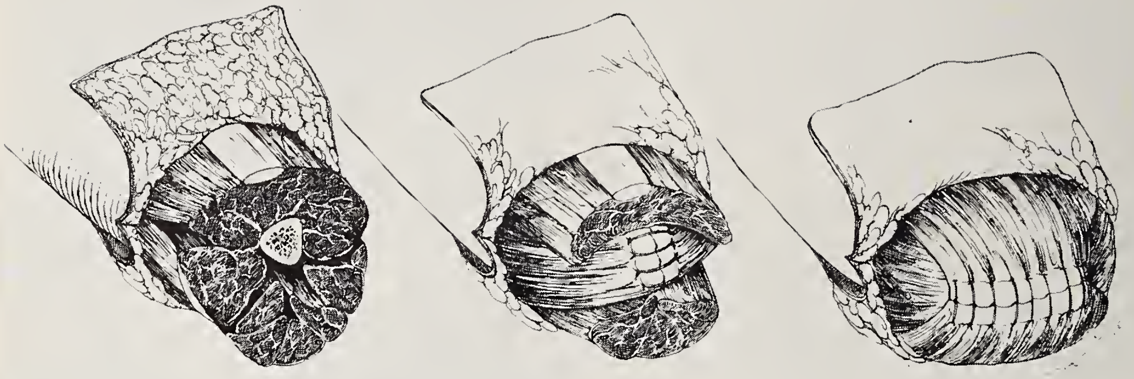

Figure 3.—Mondry's myoplastic procedure for above-knee amputation. (Modified from Chirurg.[8])

factorily and medical problems may arise later because of circulatory deficiencies. Moreover, even better functioning for powering the artificial limb may be obtained by joining the antagonistic muscles to each other as well as anchoring them to the bone. According to Mondry's method of myoplasty, the severed part of the adductors is sutured to the vastus lateralis, and the hamstrings and quadriceps are joined together over and to the underlying muscle layer in the above-knee amputation (Figure 3). A similar method is used in the below-knee procedure.[8]

Circulation is also impaired in the average amputation stump. Oscillogram recordings made by us have shown that there is a reduction in the total amount of blood traversing the stump as compared with the corresponding segment of the intact limb. Perhaps because of this factor, most of the amputation stumps tested became cooler when the ambient air was cooled but did not warm appreciably after warming of the trunk and generalized vasodilatation.[4]

Venous drainage of the stump probably suffers even more than arterial supply. Venous return in the lower extremities, especially when it occurs against gravity, depends to a great extent on the pumping action of the muscles. But we have seen that in the classic amputation the muscles are put to little or no use; if partial or total fatty degeneration takes place, they also form an obstruction to proper circulation. In the bone, too, from which venous blood is normally drained off almost instantaneously, stasis occurs because of the disturbed intramedullary pressure conditions (Figure 4*A*). (The intramedullary cavity is no longer a rigid closed structure.)

These problems, too, are greatly relieved by the use of an osteoplastic-myoplastic procedure. The osteoplastic closure of the medullary cavity restores the original condition of a closed rigid structure (Figure 4*B*). The muscles, which function again, do not degenerate but fulfill their normal function as pumps to aid venous return.

Finally, the problem of pain, both stump and phantom pain, is undoubtedly the most difficult one with which an amputee has to cope. The origins of the different kinds of pain are often obscure. We have used local anesthesia for differential diagnosis: If a low spinal anesthetic eliminates the pain, it seems justifiable to try various surgical procedures affecting the nerves in the periphery in an attempt to alleviate the symptoms. If, on the other hand, the spinal anesthetic has no effect, it may be assumed that the pain originates in higher centers and surgical procedures in the periphery probably would be ineffectual.

How may pain be prevented in the first place? We recommend resecting the nerves high, so that they will not become adherent to scar tissue. We are also experimenting with a procedure (the Boldrey procedure[3]) in which the cut end of the nerve is buried in the bone, being inserted into a hole drilled through the cortex. The advantage of this procedure is that the neuroma, which is usually sensitive to mechanical irritation, is well protected by the hard shell of bone.

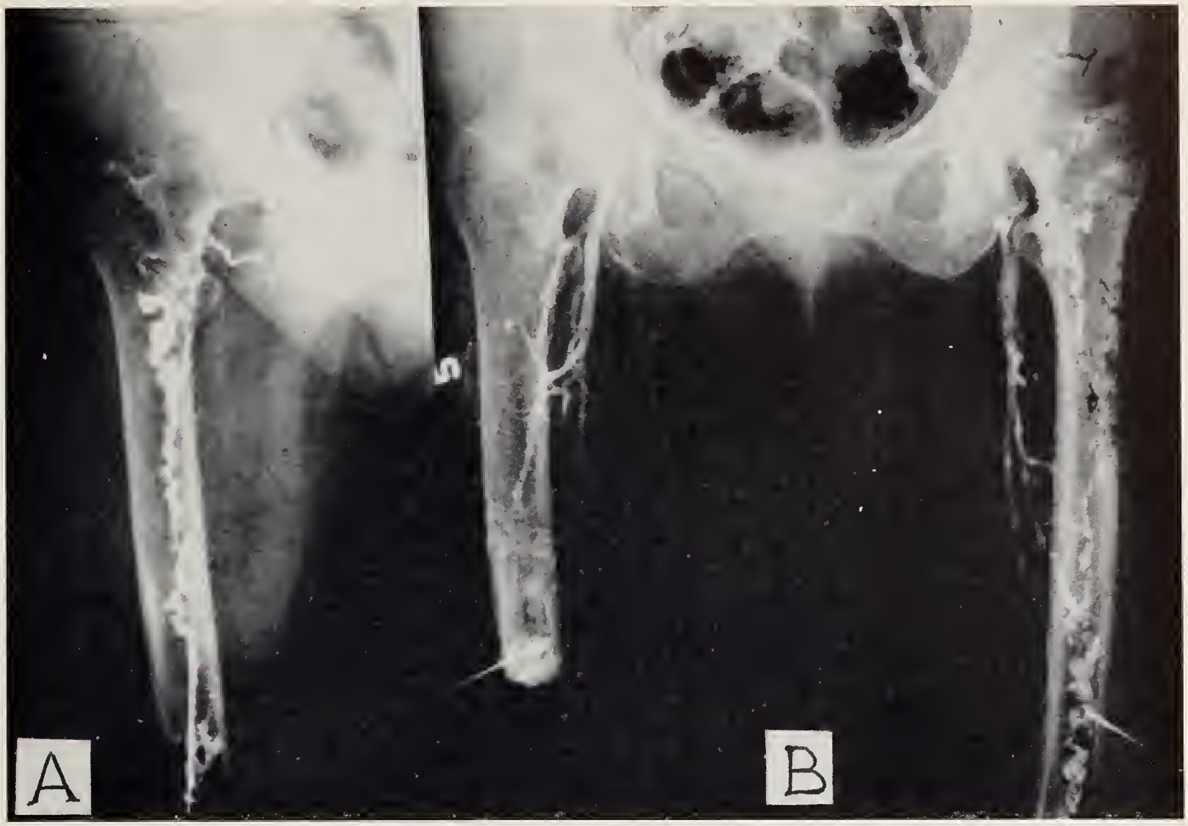

Figure 4.—Venograms of above-knee amputee. *A*, without closure of medullary cavity. *B*, after osteoplastic closure of medullary cavity.

It will be seen from the foregoing that we believe direct partial end-bearing to have many advantages for the health of the amputation stump. Our goal is an insensitive stump that can stand up well to normal mechanical wear and tear. Of course, it is of no use to prepare a stump for end-bearing surgically and then find it impossible to obtain a prosthetic device designed for end-bearing. Ever since the first osteoplastic amputations were done, surgeons have complained of not finding limb makers to fit their patients.

Moreover, it is of utmost importance to insure proper preoperative and postoperative care. Before the amputation, if time allows, everything should be done to achieve optimum conditions of circulation in the extremity. Afterward, immediate appropriate physical therapy measures are imperative to maintain good circulation, prevent muscle contractures and toughen the stump as much as possible for weight-bearing over its entire surface.

METABOLIC DEMANDS OF LOCOMOTION

For the past three years the Energy Laboratory, a subdivision of the Biomechanics Laboratory, has been investigating the problems of energy expenditure of physically disabled human subjects during walking. The first step was to establish normal values of energy expenditure at various speeds. Therefore, during the first year of activity of the Energy Laboratory a study was done of 19 normal adults—12 men and 7 women. It was hoped that a study of normal subjects and a comparison of their energy requirements with those of amputees and other physically disabled persons would provide information that might be useful in evaluating the efficacy of crutches, the suction-socket prosthesis, the pylon and other assistive devices. An additional goal was the definition of criteria whereby one could avoid imposing hazardous work loads on disabled persons—for example, patients with a history of cardiovascular disease.

The measurement of energy expenditure during walking has a long history, but until recently no entirely satisfactory quantitative relationships between energy expenditure and speed of walking had been established. It has proved possible to relate energy expenditure to speed by a rather simple equation, details of which were published in 1958.[9] We will discuss here the general arrangement of the Energy Laboratory and our method of measuring the energy cost of any activity.

A track 24.4 meters in length and octagonal in shape is laid out on the floor of the laboratory. A given subject may be studied during a paced or an unpaced walk, depending on the requirements of the particular experiment. As nearly as possible, subjects are studied under "stabilized" conditions; that is, they have walked long enough to have attained a steady metabolic state. During the walk, pulmonary ventilation is measured with a respirometer of the Max Planck type, which is so small—it weighs 3.5 kg.—that it may be carried on the back of any except the most severely disabled patient. Expired air is collected in a rubber bag and analyzed for oxygen concentration with a Beckman-Pauling oxygen analyzer. From such measurements the volume of oxygen consumed in a given time may be determined, and this figure may be translated into calories of energy expended per unit of time. We have found the most useful way of expressing energy expenditure to be calories per meter walked per kilogram of body weight, and such units will be used in this discussion.

In Chart 1 the lower curve shows the relationship for normal adult subjects between energy expenditure, after stabilization, in calories per meter per kilogram and walking speed in meters per minute. The shaded area represents one standard deviation. It will be seen that the curve starts out with a high figure for energy expenditure at low speeds of walking, comes down through a minimum value for an optimum speed, and then increases again as the walking speed increases. A striking feature of the energy-expenditure curve for any subject walking at a variety of speeds is that it passes through a minimum level that is characteristic for that particular subject. This unique point provides a means of comparing the energy expenditure of the same subject under a variety of conditions or of comparing the energy expenditures of normal and handicapped subjects.

Another fundamental feature of the energy curve is that the optimum speed of walking represents also a "natural" or "comfortable" speed; in other words, a given subject when left to himself tends to adopt a walking speed nearly the same as that at which minimum energy expenditure occurs.

We have made energy studies of a number of above-knee amputees during ambulation in order to compare their energy expenditure during ambulation, when they are using their usual assistive (prosthetic) device, with that of normal subjects and also to compare energy expenditure during ambulation when different assistive devices are used by the same subject.

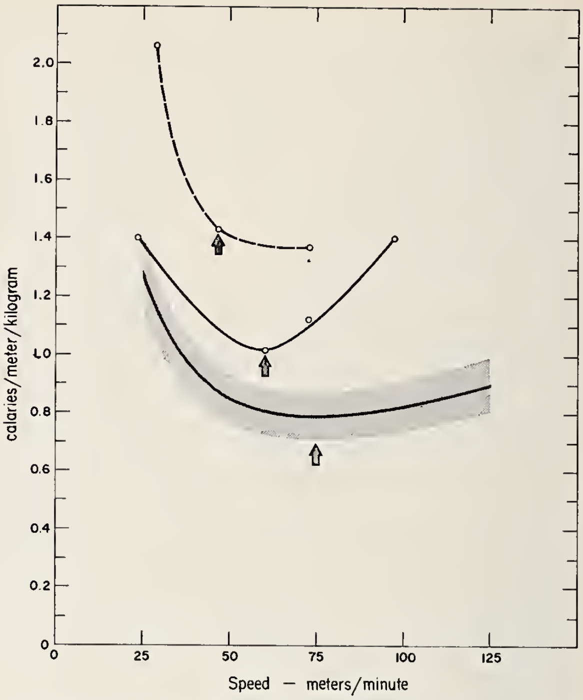

Chart 1.—Comparison of energy expenditure in calories per meter walked per kilogram of body weight of normal persons with that of an above-knee amputee. *Lower curve*, average energy expenditure of normal persons walking at various speeds. *Stippled area*, one standard deviation. *Middle curve*, amputee walking with suction-socket prosthesis. *Top curve*, same amputee walking with forearm crutches. Arrows show natural walking speeds.

Referring again to Chart 1, the middle curve shows the energy expenditure of an above-knee amputee walking with a carefully fitted suction-socket prosthesis. The optimum speed of walking, represented by the minimum point of the curve, is substantially less than that for normal subjects; yet the energy expenditure is about 30 per cent greater than that of normal subjects walking at a natural and faster gait. Even so, the suction-socket prosthesis has proved to be the best prosthetic device, from the standpoint of energy expenditure, among the devices so far studied for above-knee amputees.

The top line in Chart 1 shows energy expenditure of the same subject using forearm crutches. While the optimum speed of walking is not greatly different from that with the suction-socket prosthesis, the energy expenditure is much higher, being about 70 per cent greater than in normal subjects walking at a natural speed and about 35 per cent higher than that of the amputee walking at his optimum speed with the suction-socket prosthesis. Another noteworthy feature of these energy curves is that a wider, as well as more economical, range of speeds is possible with the suction-socket prosthesis than with forearm crutches.

We believe that energy studies of the type just described are capable of yielding information of great value to surgeons, prosthetists and other persons interested in the problem of rehabilitation, especially of geriatric patients. It is in persons of the latter type that the energy demands of everyday activity are most critical.[1] The repeated finding that crutch-walking is very expensive, from the energy standpoint, would seem to argue against the use of crutches as a suitable assistive device for many patients.

SKIN DISORDERS

The Dermatological Study Group at the Biomechanics Laboratory has been studying skin disorders associated with wearing a prosthetic device. It is common for amputees to have skin disorders at one time or another, and neglect of the smallest of lesions may, in time, lead to serious disability.

Once a leg amputee has become accustomed to wearing his artificial limb, he wants to continue using it, and it is of considerable concern to the physician and the prosthetist—in fact, the entire clinical team—that any disorder that might return him to crutches or to bed rest be prevented. Some amputees have no difficulty with the skin over the stump for months or even years, while others, whose skin is apparently a weak tissue, have frequent skin problems after they begin wearing an artificial limb. Even a minute lesion is important, since it may be the forerunner of an extensive skin disorder which can bring mental, social and economic disaster to the amputee.

Daily hygienic care of the amputation stump and of the prosthetic socket has been found to be of utmost importance. A neglect of cleanliness can easily result in damage to the skin and hence to cutaneous disorders that may force the amputee to forego use of his artificial limb, at least temporarily. In many instances a simple hygienic program, with use of an antiseptic detergent, has helped prevent or eliminate a skin disorder.[2]

The skin problems associated with wearing an artificial leg have been studied, classified and evaluated during the past four years at the Biomechanics Laboratory. Skin disorders that require medical attention fall into several categories, including mechanical injury to the skin, contact dermatitis and other allergic reactions, post-traumatic epidermoid cysts, bacterial and fungus infections, generalized cutaneous disorders that are localized on the stump, edema and conditions that result from it (chronic ischemic ulcers, verrucous hyperplasia) and benign and malignant tumors. Persons concerned with amputees should be aware of certain danger signals, as well as of the pathological conditions they denote. As we will illustrate later, early recognition and treatment may prevent a disabling skin disorder.

Wearing a prosthetic device may also cause mechanical injury to the skin. Abrasion is the first sign that the stump is not being securely held in its socket and that the artificial limb is exerting too much or the wrong kind of pressure on the stump. Areas in which abrasion is most often seen are those over tendons and bones only lightly covered with tissue—the head of the fibula, the tibial tubercle, the anteromedial and anterolateral condyles of the tibia, the anterodistal end of the tibia and the hamstring tendons. Abrasions in these areas are due to settling of the stump deeper in the socket, up-and-down movement of the stump in the socket, tilting of the socket anteroposteriorly or mediolaterally on the stump, twisting of the socket around the stump or too close a fit of the socket over vulnerable areas.

We have seen a number of patients with contact dermatitis of the amputation stump. This disorder is caused by contact of the skin with a substance that acts either as a primary irritant or as a specific allergic sensitizer. To understand this problem, the nature of the plastics and resins used in external and internal finishes of the different types of prosthetic device must be studied. However, in some instances, we have found only by a carefully taken history that the use of a new cream or lubricant or cleansing agent coincided with the onset of the dermatitis. Sometimes a foam-rubber cushion or a plastic-covered pad is used in the bottom of the socket, and these are capable of producing contact dermatitis of the skin after weeks, months or even years of use (Figure 5). When contact dermatitis is suspected, every attempt should be made to determine exactly what caused it. Patch tests are most informative. Removal of the causative agent usually results in cure. In some cases, when the agent causing the contact dermatitis cannot be determined from history or patch testing, temporary therapy alleviates the symptoms; we have found cool compresses, bland antipruritic lotions and the topical use of hydrocortisone or prednisone preparations to be most beneficial.

A number of observers have described the appearance of multiple cysts, commonly called post-traumatic epidermoid cysts, in the skin of an above-knee amputee's thigh. These are thought to be caused by forces of torque or shear exerted on the areas covered by the upper medial margin of the above-knee socket. They also occur, although not as frequently, in below-knee amputees. The cysts may remain quiescent for a long time; then, on the occurrence of secondary bacterial invasion they may become abscessed and the characteristic clinical picture develop. In the phase of acute infection, hot compresses and antibiotics are indicated. As the process localizes, incision and drainage may be temporarily beneficial. In some instances the chronic problem can be improved or successfully eliminated by proper fit and alignment of the prosthetic device. In our experience, however, there is no completely satisfactory method of treatment, and each case is a therapeutic challenge.

Folliculitis and furuncles may result from poor hygiene of the stump or the socket or both. Chronic recurrent folliculitis has been cured in several cases by following a prescribed routine hygienic program. Use of the antiseptic detergent pHisoHex®, which contains hexachlorophene—a hundred times more effective than soap in eliminating skin bacteria—probably accounts for the success of this program. In other cases therapy may have to include application of wet dressings, incision and drainage of boils after localization, oral or parenteral administration of antibacterial substances and application of local bactericides. Because these stump conditions are frequently chronic or recurring, it is best to choose relatively nonsensitizing substances for topical application.

Bacterial and fungus infections, which are occasionally seen, may be difficult to eradicate completely because of the continued environment of moisture and warmth within the enclosed socket of the artificial leg.

Generalized cutaneous disorders may be localized on the skin of the stump. Those we have seen include acne vulgaris, psoriasis, lichen planus, eczemas and seborrheic dermatitis.

It must be emphasized that, to prevent the development of a disabling skin disorder, lesions must be diagnosed and treatment begun early. For instance, edema of the distal portion of the stump may lead to such additional problems as cutaneous and subcutaneous hemorrhage, stasis eczema, chronic ischemic ulcers or verrucous hyperplasia.

Chronic ulcers (Figure 6) of the stump may result from bacterial infection as well as from poor cutaneous nutrition secondary to an underlying vascular disorder. The underlying cause in all cases should be investigated and appropriate treatment provided. Malignant ulcers can develop within old, persistent stump ulcerations; therefore, every effort should be made to diagnose the condition before it becomes chronic. With repeated infection and ulceration of the skin, the amputation scar may become adherent to the underlying subcutaneous tissues, often causing further erosion and ulceration. Continued wear and tear from use of the prosthetic device may necessitate surgical revision in order to free the scar in the adherent area.

Verrucous hyperplasia also may occur after prolonged edema, and in several instances it has been seen to cover skin of the entire terminal portion of the stump. In cases in which biopsy specimens have been examined, the pathological features of viral verrucae have not been demonstrated, but three factors seem to be involved: An underlying vascular disorder, bacterial infection and poor prosthetic fit and alignment. Treatment frequently consists of adequate control of the bacterial process and gradual end-bearing maneuvers to improve the vascular stasis. A new artificial limb to correct the fit and alignment and gradual compression of the terminal part of the stump to improve the stasis will often alleviate the warty condition or cause it to disappear (Figure 7).

Tumors of the stump may be benign or malignant. We have seen innocent hyperkeratosis, or callus formation, and have removed verrucae, or viral warts, from the stump with use of local anesthesia.

The importance of early recognition and treatment of skin lesions on the stump of amputees cannot be overemphasized. Heavy demands are placed upon the skin of the stump by the artificial leg. Even a minor skin eruption may, through neglect or mistreatment, become an extensive disorder that will deprive the amputee of the use of his artificial limb and seriously affect the progress of his rehabilitation. Services of the entire clinical team are required to provide the maximum benefit to the individual amputee.

Biomechanics Laboratory, University of California Medical Center, San Francisco 22 (Inman).

REFERENCES

1. Bard, G.: and Ralston, H. J.: Measurement of energy expenditure during ambulation, with special reference to evaluation of assistive devices, Arch. Phys. Med., 40:415-420, Oct. 1959.

2. Barnes, G. H.: Skin health and stump hygiene, Artificial Limbs, 3:4-19, Spring 1956.

3. Boldrey, E.: Amputation neuroma in nerves implanted in bone, Ann. Surg., 118:1052-1057, Dec. 1943.

4. California, University, Berkeley and San Francisco: Prosthetic Devices Research Project: Studies of Circulation and Surface Temperature of Amputation Stumps, by E. Brown. Report to the Prosthetics Research Board, National Research Council, Ser. 11, No. 32. Berkeley, The Project, June 1957.

5. Ertl, J.: Über Amputationsstümpfe, Chirurg., 20:218-224, 1949.

6. Inman, V. T., and Eberhart, H. D.: The Lower-Extremity Clinical Study—its background and objectives, Artificial Limbs, 2:4-34, Jan. 1955.

7. Levy, S. W.: The skin problems of the lower-extremity amputee, Artificial Limbs, 3:20-35, Spring 1956.

8. Mondry, F.: Der muskelkräftige Ober- und Unterschenkelstumpf, Chirurg., 23:517-519, Nov. 1952.

9. Ralston, H. J.: Energy-speed relation and optimal speed during level walking, Internat. Ztschr. angew. Physiol., 17:277-283, 1958.

PLATE I

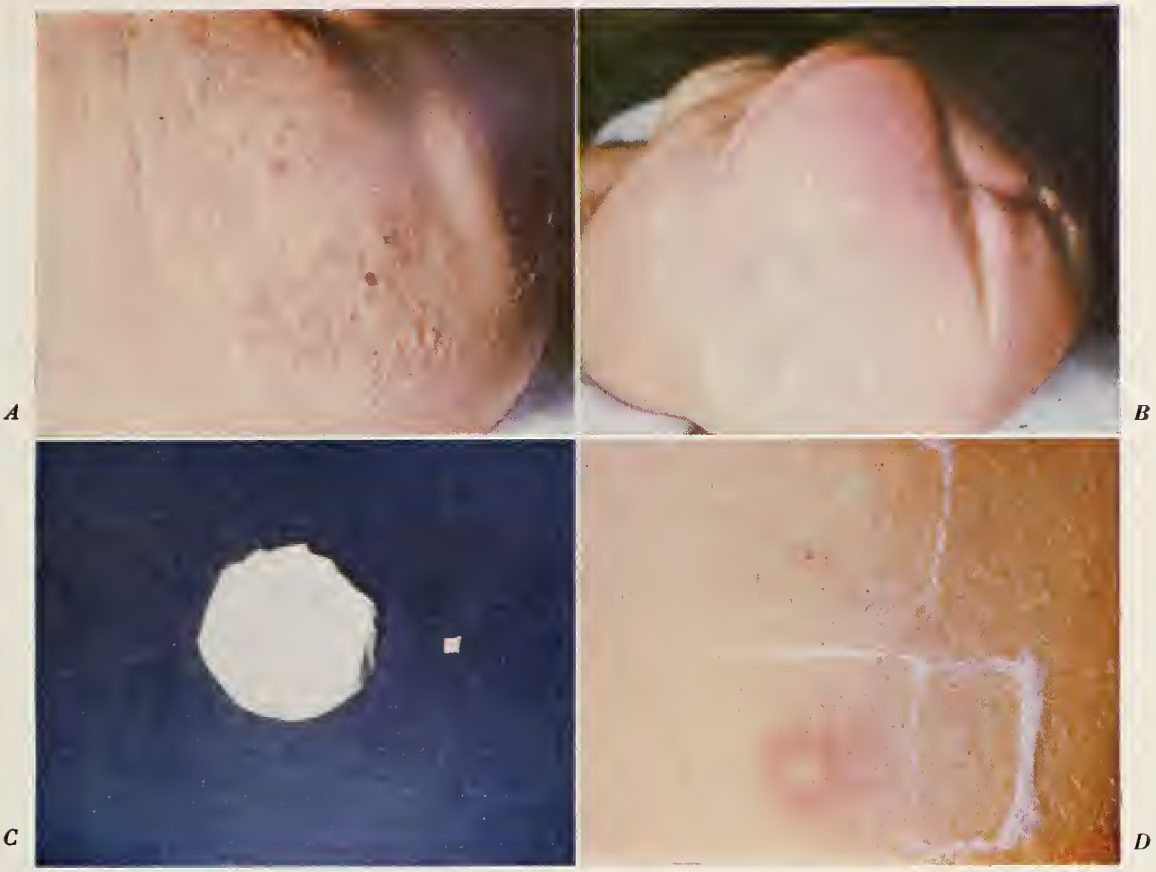

Figure 5.—*A*, chronic contact dermatitis of the distal stump skin, caused by contact with plastic-covered cushion in suction socket. Removal of cushion provided complete clearing in one week. Patch tests were positive for allergic sensitivity to the plastic material. *B*, contact dermatitis of the distal stump skin, caused by contact with foam-rubber pad in socket. Note circular zone of erythema and edema. Removal of pad gave rapid clearing and disappearance of itching. *C*, *left*, foam-rubber pad removed from socket of patient in *B*; *right*, 4-mm. piece of material used in patch-testing. *D*, skin of upper arm of same patient as in *B*, with positive reaction to test for foam-rubber sensitivity. (Reprinted with permission from *Artificial Limbs*.[7])

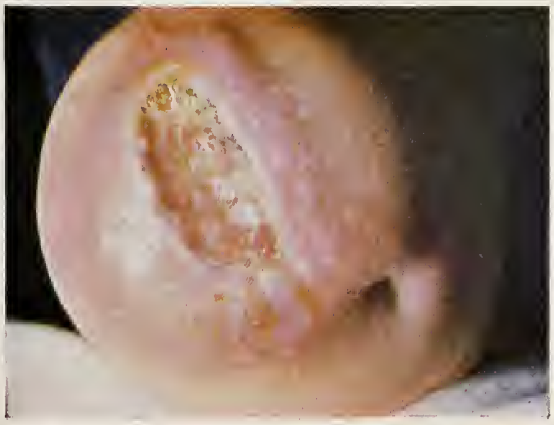

Figure 6.—Chronic ischemic ulcer, caused by poor prosthetic fit with venous obstruction, in 43-year-old below-knee amputee. (Reprinted with permission from *Artificial Limbs*.[7])

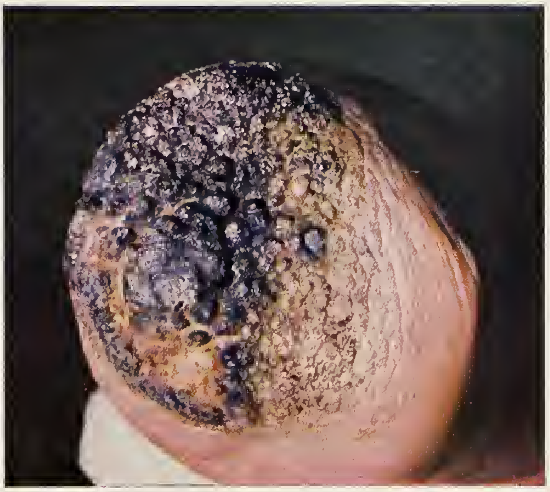

Figure 7.—Verrucous hyperplasia of distal stump skin. (Reprinted with permission from *Artificial Limbs*.[7])

Phonocardiography

E. GREY DIMOND, *M.D.*, and A. BENCHIMOL, *M.D.*, La Jolla

• In phonocardiography the second heart sound is important in appraisal of congenital heart disease and pulmonary hypertension because it reflects the duration of right ventricular systoles.

The systolic murmur in patients with intracardiac shunt decreases as pulmonary hypertension develops, and may eventually disappear completely as the pulmonary pressure reaches systemic level.

Reference tracings in phonocardiography are useful for showing the interrelationship of the various cardiac sounds and murmurs.

ADVANCES IN THE surgical treatment of heart disease have made imperative the need for exact diagnosis. Recently developed cineangiocardiography and dye dilution studies, together with data obtained during right or left heart catheterization, potentially afford a great degree of accuracy in the cardiac diagnosis.

Careful auscultation of the heart and modern phonocardiography, however, continue to play an important role in the bedside diagnosis. Correlation of phonocardiographic findings and the altered cardiac hemodynamic features demonstrate that the classic clinical signs of various entities cannot be considered a constant phenomenon. The cardiac sounds undoubtedly vary with the severity of a particular lesion. Careful, precise auscultation continues to have an important part in cardiac diagnosis, however.

HEART SOUNDS

There will be no attempt to describe in detail in the present report the characteristics of normal heart sounds, which have been extensively studied by several investigators.*

The following abbreviations have been employed in the present report: 1—First sound; 2—Second sound; 3—Third sound; 4—Fourth sound; SM—Systolic murmur; DM—Diastolic murmur; ASM—Atrial systolic murmur; A_2—Aortic valve closure; P_2—Pulmonic valve closure; OS—Opening snap; CT—Carotid tracing; VT—Jugular venous tracing; ACG—Apex cardiogram; RV—Right ventricle; LV—Left ventricle; RFW—Rapid filling wave; AA—Aortic area; PA—Pulmonic area; LSB—Left sternal border—4th intercostal space. Vertical lines in the tracings are 0.04 second apart. The tracings were recorded on the Twin Beam (Sanborn) phonocardiograph at the speed of 75 mm. per second. The detailed description of our routine PCG (phonocardiogram) analysis has been described in previous reports.[7,9]

First Sound

The first sound is produced by closure of mitral and tricuspid valves (Figure 1), although in the phonocardiogram four components are often recorded. It is well known that either the mitral or tricuspid component of the first sound may be delayed and/or accentuated in patients with mitral or tricuspid stenosis (Figure 2). In mitral stenosis the left atrial hypertension contributes to delay in the closure of the mitral valve. In some cases of mitral stenosis a reverse split of the first sound might be expected (Figure 3). A loud, sharp and delayed first sound implies the presence of a good, flexible and mobile valve (Figure 2a, b). A small, muffled first sound in patients with unquestionable mitral stenosis indicates the presence of rigid, nonflexible and calcified cusps (Figure 2c, d). Conduction defect, either right or left bundle branch block, can also delay closure of the tricuspid or mitral valves.

With atrial septal defect the increased flow load of the right atrium and ventricle delay the closure of the tricuspid valve and an abnormal split of the first or second sound is recorded consistently.[20] That the right bundle branch block is not the most important factor in production of the split second sound is demonstrated frequently by the continued pattern of right bundle branch block and absence of the split following repair of the atrial septal defect.[9]

Second Sound

A careful analysis of the second sound provides very useful information regarding hemodynamic factors in the pulmonary circulation. In normal young persons a physiological split second sound (aortic component preceding the pulmonic component by 0.03 to 0.04 second) is usually present, and is without pathological significance (Figure 1b). In adults above 25 years of age the second sound is usually single in expiration at the pulmonary area. However, during inspiration the increased venous return to the right ventricle delays the closure of the pul-

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From the Institute for Cardiopulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla.

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Submitted July 19, 1960.

*References 6, 16, 17, 24, 25, 29, 33.

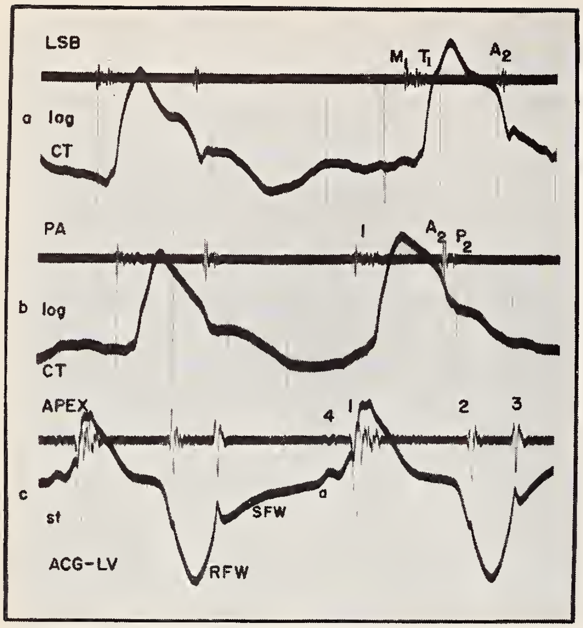

Figure 1.—Phonocardiograms, normal subjects. (a) Physiological splitting of the first sound. Note that both components (M_1 preceding T_1) precede the initial rising in the CT. (b) Physiological splitting of the second sound. The aortic component (A_2) precedes the dicrotic notch of the CT by 0.03 second. The pulmonic component (P_2) which has a smaller amplitude in comparison with A_2 follows the dicrotic notch of the CT by 0.01 second. (c) Quadruple rhythm. Fourth sound preceding M_1 by 0.09 second and is coincident with the peak of the "a" wave in the ACG (atrial contraction) and third sound following A_2 by 0.15 second is coincident with peak of rapid filling wave (RFW) in the ACG. A_2 precedes the beginning of RFW by 0.07 second.

monary valve and a split of the second sound can be present.[7]

The closure of the pulmonary valve (P_2) seems to depend on several factors: Mobility of the valve, diastolic pressure in the pulmonary artery, pulmonary flow and resistance. Alteration of these factors, alone or in combination, will result in an abnormal pulmonic second sound.

Valve rigidity and the low diastolic pressure in the pulmonary artery with pulmonary stenosis are factors responsible for the delay in the closure of the pulmonary valve. The widely split second sound with diminished pulmonic component is characteristic of the condition. The A_2—P_2 interval seems to give useful information regarding the pressure gradient across the pulmonary valve, interval increasing as the pressure gradient increases[2,22] (Figure 4). Absence of the pulmonary second sound in patients with pulmonary stenosis indicates a considerably diminished pulmonary flow, and constitutes an important sign in patients with severe tetralogy of Fallot and large right to left shunt.[2] Pulmonary hypertension due to atrial septal defect, ventricular septal de-

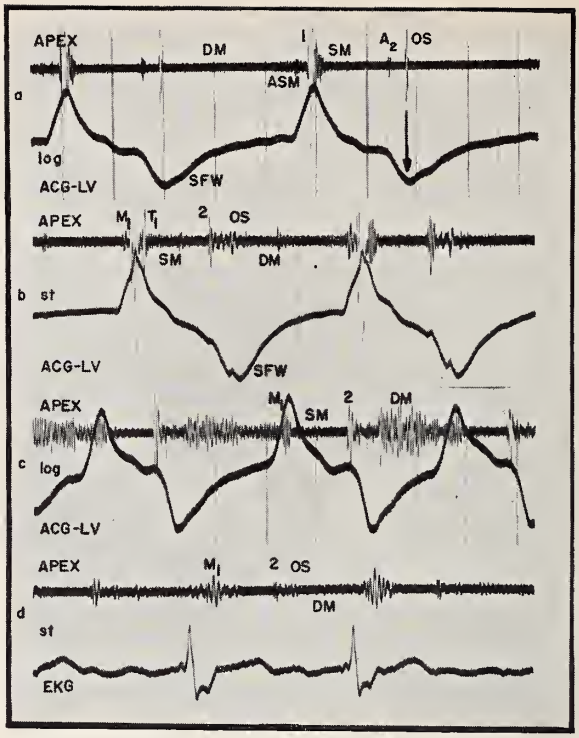

Figure 2.—Different aspects of the first sounds in mitral stenosis. (a) Typical PCG findings of moderate MS. First sound is single and definitely accentuated (compare the amplitude of M_1 with A_2). Note the first sound which is coincident with the peak of the systolic wave in the ACG and opening snap coincident with the beginning of the left ventricular filling (2-OS interval $= 0.08$ second). Low pitched diastolic murmur and atrial systolic murmur. Apex cardiogram without rapid filling wave (SFW $=$ slow filling wave). (b) Split first sound. Loud M_1 preceding T_1 by 0.04 second. OS follow A_2 by 0.09 second. Long diastolic murmur and high pitched decrescendo systolic regurgitant murmur. Absence of RFW in the ACG. (c) Mitral stenosis with severe calcified mitral valve. Single and diminished first sound. Opening sound not recorded. High amplitude, long diastolic murmur. No atrial systolic murmur (auricular fibrillation). (d) Mitral stenosis with calcified valve. Single and diminished first sound. The Q-1 interval (beginning of the QRS in the EKG to M_1) is prolonged to 0.10 second. Note the presence of opening snap (2-OS interval $= 0.06$ second) in the presence of calcified valve. Long diastolic murmur. No atrial systolic murmur (auricular fibrillation).

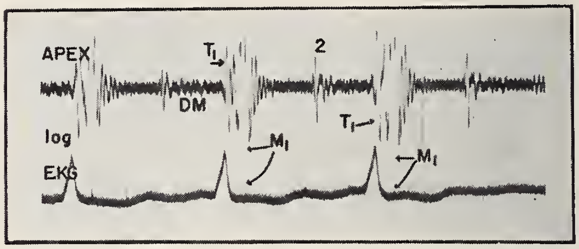

Figure 3.—Mitral stenosis. Reversed split of the first sound. Note that the loudest vibration (M_1) follow T_1 (reverse of normal). Observe that T_1 follow the R wave in the EKG and note also that the patient has auricular fibrillation. These two factors rule out the possibility of the first component being the atrial contraction. Long diastolic murmur.

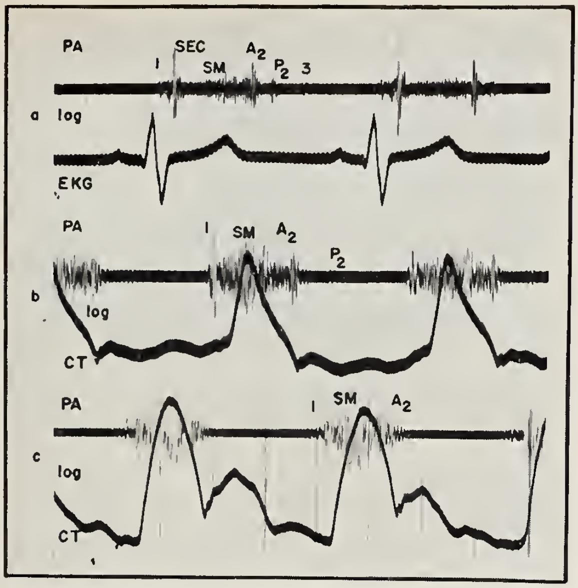

Figure 4.—Second sound in isolated pulmonary valvular stenosis. (a) Mild pulmonary stenosis. Pressure gradient RV-MPA—40 mm. Hg. A_2-P_2 interval 0.07 second and diminished P_2. Third sound. Systolic ejection click following the first sound by 0.07 second. Pulmonary systolic ejection murmur with mid-systolic accentuation. (b) Moderate pulmonary stenosis. Pressure gradient RV-MPA—100 mm. of mercury. A_2-P_2 interval 0.14 second. P_2 decidedly diminished. A_2 precedes the dicrotic notch in the CT by 0.02 second and P_2 follow it by 0.12 second. Pulmonary systolic ejection murmur with mid-systolic accentuation going through A_2. (c) Severe pulmonary stenosis. Pressure gradient RV-MPA—130 mm. of mercury. P_2 is absent. A_2 cannot be well identified because the murmur goes through. Pulmonic systolic ejection murmur with mid-systolic accentuation.

fect, patent ductus arteriosus or primary pulmonary hypertension and other conditions produces the opposite phenomenon,[3,15,32] as observed in pulmonary stenosis. Our previous report[3] on patients with ventricular septal defect and pulmonary hypertension indicates that a high diastolic pressure of the pulmonary artery produces shortening of right ventricular systole and early closure of the pulmonary valve. In this situation the second sound is usually single or very closely split (no more than 0.02 second). With increasing pulmonary artery pressure due to rising pulmonary resistance, the right ventricular systole is so short that a reverse split of the second sound might be expected. This phenomenon, which we called "pulmonary reverse split,"[3] is the opposite of "aortic reverse split," which is due to prolongation of left ventricular systole, as occurs in cases of aortic stenosis,* essential hypertension and left bundle branch block.

In patients with atrial septal defect a wide split second sound is present.[1,9,11,23] This is most probably due to the pronounced increase in pulmonary flow from the left to right atrial shunt. If pulmonary hypertension develops,[35] however, with balance shunt, the widely split second sound reverts to a single and accentuated second sound.[9]

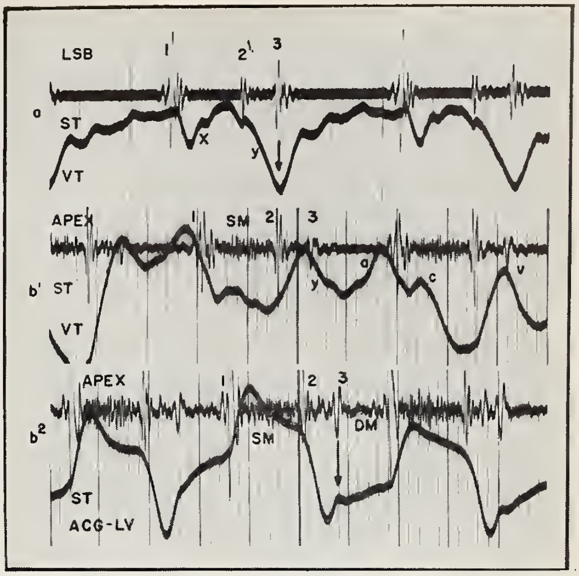

Figure 5.—Third sound. (a) Right ventricular third sound in case of proved constrictive pericarditis. Note that the third sound is coincident with the end of "y" descent in the VT which marks the end of rapid filling period of the right ventricle. (b^1 and b^2) Left ventricular third sound in patient with ventricular septal defect without significant pulmonary hypertension. MPA pressure 35/10 mm. of mercury. Note in b^1 that the third sound follow in the beginning of "y" descent in the VT. In b^2 (same patient) the third sound is coincident with the peak of the RFW of the left ventricular ACG. Pan-systolic regurgitant murmur and mid-diastolic murmur.

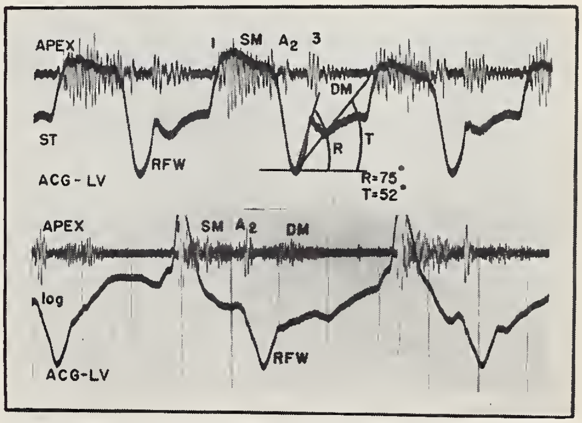

Figure 6.—Mitral regurgitation. *Top*—Diminished first sound. Third sound coincident with the peak of the RFW in the left ventricular ACG. (R-75°, T/R-0.69) Mitral systolic regurgitant murmur. Short mid-diastolic murmur. *Bottom*—First sound somewhat accentuated. Mitral systolic regurgitant murmur. Mid-diastolic murmur. The systolic murmur and the presence of RFW in the ACG suggest that the dominant lesion is mitral regurgitation.

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*References 4, 8, 12, 18, 28, 34, 41.

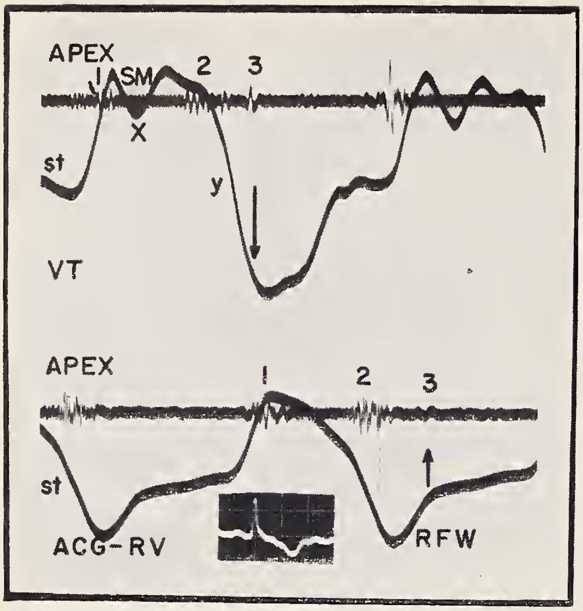


Figure 7.—Right ventricular third sound. Mitral stenosis with severe tricuspid regurgitation. MPA pressure 120/50 mm. of mercury. *Top*—Diminished first sound. Note that the third sound is coincident with end of "y" descent in the VT. Sustained systolic wave with very small "x" descent. Systolic regurgitant murmur. *Bottom*—Right ventricular ACG. Note that the third sound is coincident with the peak of ACG. At the point where the ACG was recorded the electrocardiogram revealed right ventricular complexes (position between V_1 and V_2).

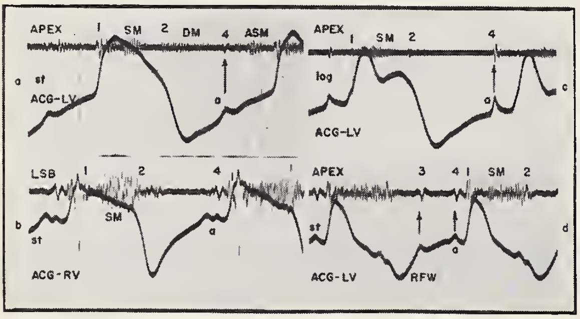


Figure 8.—Fourth sound. (a) Aortic stenosis and insufficiency with first degree of AV block. Note that the fourth sound is coincident with the peak of the "a" wave in the left ventricular ACG. The "a" wave as well as the fourth sound is 0.27 second before the first sound (AV block). Short atrial systolic murmur and an ejection mid-systolic murmur. Arterial diastolic murmur well recorded at the apex. Note that this murmur starts immediately after the second sound and before the beginning of RFW in the ACG. Sustained systolic wave in the ACG. (b) Severe pulmonary stenosis. RV pressure 230/0 mm. of mercury. MPA pressure 15/5 mm. Loud right ventricular fourth sound coincident with the peak of "a" wave in the ACG. Pulmonic systolic ejection murmur. (c) Severe aortic stenosis. Loud fourth sound coincident with the peak of "a" wave in the ACG. Aortic systolic ejection murmur. Note double systolic wave in the ACG. Compare with the ACG on "a." (d) Mitral regurgitation with third and fourth sound. Fourth sound (unusual in MR) coincident with the peak of the "a" wave in the ACG. Third sound coincident with the peak of the RFW in the left ventricular ACG. Systolic regurgitant murmur.

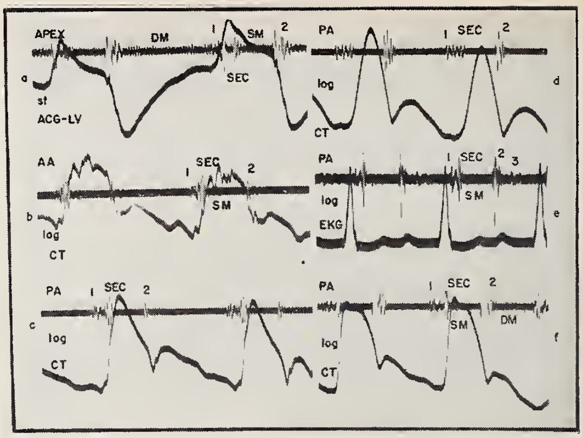


Figure 9.—Systolic ejection click in various heart diseases. (a) Mitral stenosis with pulmonary hypertension. Single first sound. The click is recorded 0.06 second after the first sound. Note that it follows the peak of the systolic wave in the ACG. Long diastolic murmur. Systolic regurgitant murmur. No RFW in the ACG. The patient had a "fish mouth" valve at surgical operation with stenosis and regurgitation and pronounced dilatation of the pulmonary artery. (b) Aortic stenosis. Systolic ejection click follows the first sound by 0.07 second and occurs during the upstroke of the CT. Note the carotid shudder in the CT and prolongation of the total ejection time and upstroke time. Aortic systolic ejection murmur. (c) Idiopathic dilatation of the MPA. The click occurs 0.08 second after the first sound at the upstroke of the CT. No intracardiac shunt was demonstrated at cardiac catheterization. Pronounced dilatation of the MPA was shown in an x-ray film. (d) Primary pulmonary hypertension. MPA pressure—140/55 mm. of mercury with dilatation of the PA. The click occurs 0.08 second after the first sound. No murmurs. (e) Truncus arteriosus. The click is close to the first sound (0.04 second) with first degree AV block in the EKG. (f) Atrial septal defect with severe pulmonary hypertension. MPA pressure 90/30 mm. of mercury. Pulmonary regurgitation. The click follows the first sound by 0.09 second and occurs at the upstroke of the CT. Loud second sound and arterial diastolic murmur.

We have been unable to consistently demonstrate the so-called "fixed split" of the second sound in cases of atrial septal defect without pulmonary hypertension.[9] There is, however, a certain degree of truth in this statement. This phenomenon depends primarily on the amount of left to right shunt. The fixed split may be present in cases of a large left to right shunt, the shunt preventing the normal increase in the venous return during inspiration. The normal split will occur if the shunt permits. The second sound split was considered to be fixed in only 9 out of 32 cases of atrial septal defect, there being no appreciable change in the A_2—P_2 interval during inspiration.[9]

The transmission of the pulmonary component of the second sound to the apex seems to indicate dilatation of the right ventricle, and is commonly observed in patients with tricuspid regurgitation, atrial septal defect and allied situations.[9]

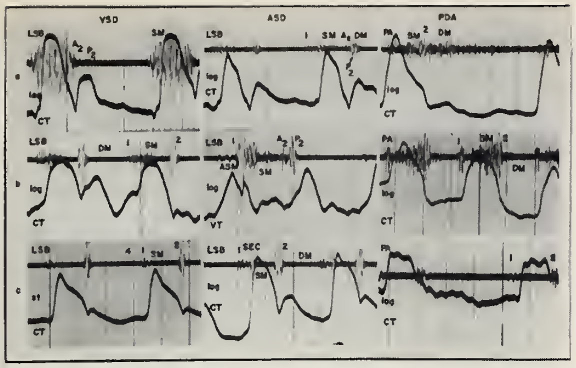


Figure 10.—Murmurs and heart sound in congenital cardiac shunt and PDA. (a) Without pulmonary hypertension. (b) Moderate pulmonary hypertension. (c) Severe pulmonary hypertension.

VSD: (a) Note the systolic murmur beginning immediately after the first sound and ending at A_2. Second sound is split by 0.09 second. This patient had functional infundibular obstruction (muscular hypertrophy of the outflow track of the RV) at surgical operation. (b) Short systolic murmur and a single and loud second sound. Note that the second sound occurs before the dicrotic notch of the CT. (c) Short and very low amplitude systolic murmur with single and loud second sound which occur before the dicrotic notch of the CT (shortening of the RV systole).

ASD: (a) Systolic ejection murmur with widely split second sound (A_2-P_2 interval 0.06 second). Note shortening of the left ventricular ejection time in the CT (0.22 second). Short arterial diastolic murmur due to dilatation of the PA (Graham Steell's murmur). (b) Loud first sound. Decrescendo systolic murmur going through A_2. Widely split second sound (0.10 second) with accentuated P_2. Note prominent "v" wave in the VT. Atrial systolic murmur. (c) Loud click and single and loud second sound. Short and low amplitude systolic murmur. Arterial diastolic murmur.

PDA: (a) Typical continuous murmur. (b) Note that the diastolic component of the murmur is very low amplitude and no longer occupies all diastole. (c) "Silent" PDA, no murmur.

Third Sound

The third or diastolic filling sound is a perfectly normal event in the cardiac cycle (Figure 1c) and is exaggerated in certain noncardiac pathological conditions such as anemia and hyperthyroidism.[19,27]

The pathological third sound, again an exaggeration of the normal third sound, and without identifying characteristics, is present in heart failure, resulting in the classic rhythm of protodiastolic gallop.[10,40] This sound is exaggerated in any condition which increases the filling of the right or left ventricle. It is in this context that it is found in patients with diastolic overload of the right or left ventricle as in mitral or tricuspid regurgitation[14] (Figures 6, 7), ventricular septal defect,[3] atrial septal defect,[9] and patent ductus arteriosus. The third sound is a bedside aid in evaluation of the amount and direction of the shunt in ventricular septal defect, atrial septal defect and patent ductus arteriosus. As previously demonstrated,[3] patients with ventricular septal defect and dominant left to right shunt usually present a diastolic filling sound and a short mid-diastolic rumble due to increased flow across the mitral valve (Figures 5b^1, b^2). If, however, pulmonary resistance and consequently, pulmonary hypertension develop to produce a balanced pressure in the ventricular chamber, the diastolic overload of the left ventricle is no longer present, and consequently, the third sound as well as the mid-diastolic rumble will disappear.

In patients with mitral stenosis due to decrease of rapid filling period (characterized in the apex cardiogram by disappearance of rapid filling wave[5,13]) the left ventricular third sound is seldom recorded (Figure 2).

The value of the third sound in constrictive pericarditis[30] (Figure 5a) and Ebstein's disease[27] is well known and will not be discussed in this report.

Fourth Sound

The fourth sound,[38] due to atrial contraction, is an unusual finding in a normal person, although it may be present occasionally (Figure 1c).

A pathological fourth sound is usually associated with right or left ventricular hypertension, as in aortic stenosis, essential hypertension, pulmonary stenosis and pulmonary hypertension (Figure 8). It can also be present in cases with auriculoventricular block of any degree (Figure 8a). When found in association with pulmonary stenosis it seems to correlate very well with the degree of right ventricular hypertension, and is most commonly seen when the ventricular septum is intact.[2] The presence of ventricular septal defect as an associated lesion relieves the right ventricular pressure (acting as a safety valve) and consequently produces a lesser strain on the right atrium.

Clicks

Leatham and Vogelpoel[21] described the presence of an early systolic sound in patients with dilatation of the pulmonary artery. Since then, numerous reports[21,26] have shown the systolic ejection click as a fairly constant finding in patients with minimal to moderate pulmonary stenosis, idiopathic dilatation of the pulmonary artery, tetralogy of Fallot, essential hypertension, etc., all conditions commonly associated with dilatation of the pulmonary artery or the aorta (Figure 9).

The mid or late systolic click continues to be an unexplained sign, and is usually heard in normal persons.

Murmurs

Modern phonocardiography has brought about the development of a new classification of cardiac murmurs, which better describes them in relation to their origin and the total dynamic complex of the

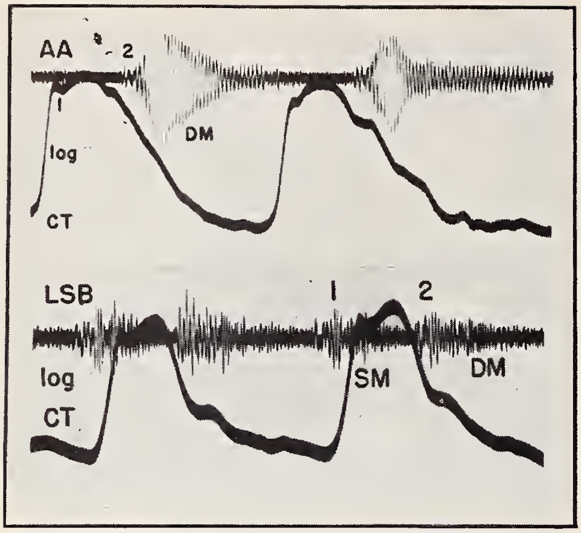


Figure 11.—*Top*—Aortic insufficiency. Syphilitic aortic insufficiency with rupture of aortic cusps. Note typical arterial diastolic murmur starting immediately after the second sound. Observe also the musical quality of the diastolic murmur as well as the absence of dicrotic notch in the indirect CT. *Bottom*—Pulmonary regurgitation in patient with ventricular septal defect and severe pulmonary hypertension (MPA = 80/30 mm. of mercury). Arterial diastolic murmur starting immediately after the second sound. Short systolic murmur.

heart. A proper classification should enable one to recognize the origin of the murmur from its description.

Systolic Murmurs

Systolic murmurs may be classified as to whether they are caused by ejection of blood across the pulmonic or aortic valve, or by regurgitation across the atrial ventricular valves or a septal defect.

A. *Ejection Murmur:* The systolic ejection murmur of pulmonary stenosis, aortic stenosis or atrial septal defect has characteristic phonocardiographic features.[9,20,37] These murmurs present certain typical characteristics, which are influenced by hemodynamic changes in the heart. For example, the murmur of mild pulmonic stenosis with midsystolic accentuation differs from that of severe pulmonary stenosis in accentuation, duration and time of beginning and ending (Figure 4). Phonocardiography has made significant contributions in this particular area.

B. *Regurgitant Murmurs:* Mitral and tricuspid regurgitation are typical examples of regurgitant murmurs (Figure 6). It has been demonstrated in these conditions that the duration of the murmur has good correlation with the degree of regurgitation. Severe mitral or tricuspid regurgitation produces a pansystolic murmur, while minimal to moderate regurgitation is associated with an early or late systolic mumur. Ventricular septal defect murmurs, although not typical regurgitant murmurs, should be included in this classification.[27] In a previous report,[3] we pointed out that a ventricular septal defect presents a pansystolic murmur, if the pulmonary pressure is below 50 to 60 per cent of the systemic pressure (Figure 10). In pulmonary hypertension, as pulmonary pressure approaches the systemic level, the murmur is usually confined to early systole, and may eventually disappear completely (Figure 10b, c). This is due to the progressive decrease in the amount of left to right shunt, to a point where the shunt is no longer present. The same phenomenon occurs in cases of atrial septal defect and patent ductus arteriosus, in which increased pulmonic pressure develops and causes a progressive decrease in left to right shunt, with eventual cessation of the shunt and the murmur, as

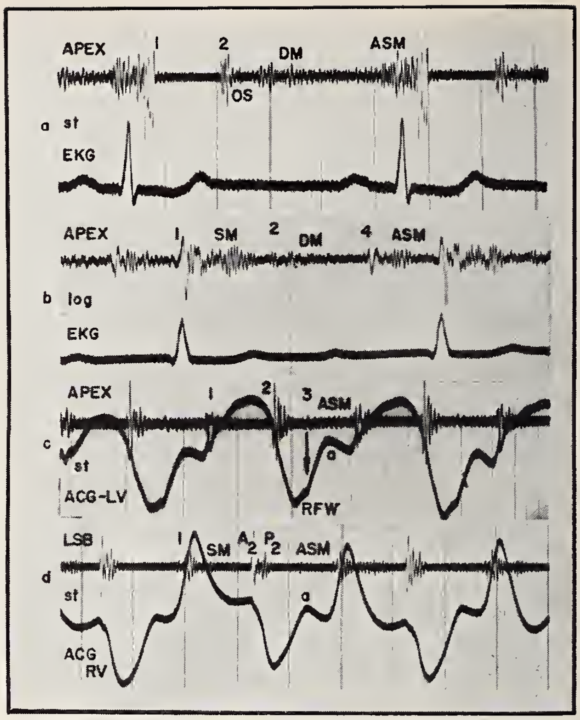


Figure 12.—Atrial systolic murmurs. (a) Mitral stenosis. Typical PCG findings of MS. Loud, single and delayed first sound (Q-1 interval = 0.10 second) 2-OS interval 0.06 second. Atrial systolic murmur beginning after the P wave in the EKG with maximal intensity at the peak of R wave. Delayed mitral diastolic murmur fading before the P wave in the EKG. (b) Aortic stenosis and insufficiency with first degree AV block. The long P-R interval favor the contraction of the left atrial and gives rise to a left atrial systolic murmur. Aortic systolic ejection murmur. (c) Idiopathic myocarditis with left heart failure. Diminished first sound. The third sound coincident with RFW in the ACG. Atrial systolic murmur which follows the very prominent "a" wave in the ACG. (d) Atrial septal defect without pulmonary hypertension. Second sound split by 0.05 second and P_2 is normal. Note that both components of the second sound precede the RFW in the ACG. Atrial systolic murmur which follows the "a" wave in the ACG. Normal first sound.

the right ventricular pressure approaches systemic pressure (Figure 10).

Diastolic Murmurs

A. *Arterial Diastolic and Atrioventricular Murmurs:* The diastolic murmurs are caused by regurgitation across the pulmonary valve, aortic valve (Figure 11) and by flow across a stenotic mitral or tricuspid valve[27,36,37,39] (Figure 12). Phonocardiography has made little contribution in the arterial diastolic murmurs of aortic regurgitation and pulmonary regurgitation, due to the difficulty of recording these high pitched low-energy sounds. However, it appears that the duration of the murmur increases with the amount of regurgitation. This same concept may be applied to the atrioventricular murmurs of mitral and tricuspid stenosis. It has been demonstrated that increased flow across the atrioventricular valve causes a diastolic murmur.[9,11,31]

The presence of a diastolic rumble at the apex in a ventricular septal defect and patent ductus arteriosus, indicates the presence of a dominant left to right shunt with large recirculation of blood across the mitral valve. Pulmonary hypertension, which decreases the left to right shunt, produces a diminution or disappearance of this murmur. The same concept may be applied to the mid-diastolic rumble of atrial septal defect, which is produced by increased flow across the tricuspid valve.

B. *Atrial Systolic Murmurs: (Presystolic Murmur):* The atrial systolic murmur occurs in any condition in which there is obstruction to the flow of blood across the mitral or tricuspid valve and overloading the right or left atrium. It is one of the typical auscultatory findings in mitral or tricuspid stenosis (Figure 12a). The murmur disappears in the presence of auricular fibrillation, but may appear in right or left ventricular hypertension due to aortic stenosis, pulmonary stenosis, systemic hypertension or pulmonary hypertension from any cause (Figure 12). In the presence of heart failure, the contractions of the atria help to maintain ventricular filling. In this situation, a fourth sound, or atrial systolic murmur may be recorded (Figure 12c). The prolongation of atrioventricular conduction may facilitate or be responsible for the recording of this phenomenon (Figure 12b).

Institute for Cardiopulmonary Diseases, Scripps Clinic and Research Foundation, 476 Prospect Street, La Jolla (Benchimol).

REFERENCES

1. Barber, J. M., Magidson, O., and Wood, P.: Atrial septal defect. Special reference to the electrocardiogram, the pulmonary artery pressure and the second heart sound, Brit. Heart J., 12:277, 1950.

2. Benchimol, A., and Dimond, E. G.: Phonocardiography in pulmonary stenosis, Ann. Int. Med., 52:145, 1960.

3. Benchimol, A., and Dimond, E. G.: Phonocardiography in ventricular septal defect, Am. J. Med., to be published.

4. Benchimol, A., and Dimond, E. G.: The ejection time in aortic stenosis and mitral stenosis, Am. J. Cardiol., 5:728, 1960.

5. Benchimol, A., Dimond, E. G., and Waxman, D.: The diastolic movements of the precordium in mitral stenosis and mitral regurgitation. A new approach to determine the hemodynamics of the mitral valve, Am. Heart J., 60:417, 1960.

6. Boyer, N. H., Eckstein, R. W., and Wiggers, C. J.: The characteristics of normal heart sounds recorded by direct methods, Am. Heart J., 19:257, 1940.

7. Boyer, S., and Chrisholm, A. W.: Physiologic splitting of the second heart sound, Circulation, 13:1010, 1958.

8. Contro, S., and Luisada, A. A.: Modification of the heart sounds in bundle branch block, J. Mt. Sinai Hosp., 19:70, 1952.

9. Dimond, E. G., and Benchimol, A.: Phonocardiography in atrial septal defect: Correlation between hemodynamics and phonocardiographic findings, Am. Heart J., 58:343, 1959.

10. Dock, W., Grandell, F., and Taubman, F.: The physiologic third heart sound: Its mechanism and relation to protodiastolic gallop, Am. Heart J., 50:449, 1955.

11. Eisenberg, R., and Hultgren, H. N.: Phonocardiographic features of atrial septal defect, Circulation, 20:490, 1959.

12. Gray, I. R.: Paradoxical splitting of the second heart sound, Brit. Heart J., 18:21, 1956.

13. Hartman, H.: Differentiation between the influence of the right and of the left ventricle in the phonocardiogram with the aid of pulsation curves, Second European Cong. of Cardiology, Stockholm, 1956, p. 127.

14. Hultgren, H., and Leo, T.: Phonocardiographic features of combined mitral stenosis and insufficiency, Medicine, 38:103, 1959.

15. Jonsson, B. T.: The split second heart sound and its correlation to the pulmonary vascular resistance, Cardiologia, 32:155, 1958.

16. Leatham, A.: Phonocardiography, Brit. Med. Bull., 8:33, 1951-52.

17. Leatham, A.: Splitting of the first and second heart sound, Lancet, 2:607, 1954.

18. Leatham, A.: The phonocardiogram of aortic stenosis, Brit. Heart J., 13:153, 1951.

19. Leatham, A.: Auscultation of the heart, Ped. Clin. N. Am., 5:839, 1958.

20. Leatham, A., and Gray, I.: Auscultatory and phonocardiographic signs of atrial septal defect, Brit. Heart J., 18:193, 1956.

21. Leatham, A., and Vogelpoel, L.: The early systolic sound in dilatation of the pulmonary artery, Brit. Heart J., 16:21, 1954.

22. Leatham, A., and Weitzman, D.: Auscultatory and phonocardiographic signs of pulmonary stenosis, Brit. Heart J., 19:303, 1957.

23. Liu, C. K., and Jacono, A.: Phonocardiography in atrial septal defect. External and intracardiac phonocardiograms, Am. J. Cardiol., 2:714, 1958.

24. Luisada, A. A., Alimurung, M. M., and Lewis, L.: Mechanisms of production of the first heart sound, Am. J. Physiol., 168:226, 1952.

25. Luisada, A. A., Liu, C. K., Aravanis, C., Testelli, M. R., and Morris, J.: On the mechanism of production of the heart sounds, Am. Heart J., 55:383, 1958.

26. Minhas, K., and Gasul, M.: Systolic clicks: a clinical, phonocardiographic, and hemodynamic evaluation, Am. Heart J., 57:49, 1959.

27. McKusik, V. A.: Cardiovascular Sound in Health and Disease, Williams and Wilkins Co., Baltimore, 1958.

28. McKusik, V. A., Reagan, W. P., Santos, G. W., and

Webb, G. N.: The splitting of heart sounds, Am. J. Med., 19:849, 1955.

29. Moscowitz, H. I., Donoso, E., Jebb, I., and Welkowitz, W.: Intracardiac phonocardiography. Correlation of mechanical acoustic and electric events of the cardiac cycle, Circulation, 13:983, 1958.

30. Mounsey, P.: The early diastolic sound of constrictive pericarditis, Brit. Heart J., 17:143, 1955.

31. Nadas, A. S., and Alimurung, M. M.: Apical diastolic murmur in congenital heart disease, Am. Heart J., 43:691, 1952.

32. Perloff, J. K., and Harvey, W. P.: Mechanisms of fixed splitting of the second heart sound, Circulation, 13:998, 1958.

33. Rappaport, M. B.: The graphic registration of the normal heart sound, Am. Heart J., 23:591, 1942.

34. Reinhold, J., Rudhe, U., and Bonham-Carter, R. E.: The heart sounds and the arterial pulse in congenital aortic stenosis, Brit. Heart J., 17:327, 1955.

35. Scebat, L., Veridis, E., Renais, J., and Lenegre, J.: L'hypertension arterielle pulmonaire dans les communications interauriculaires interventriculaires et aorto pulmonaires, Arch. Mal. Coeur, 50:801, 1957.

36. Steinzeig, S. M., Pinsky, S. T., Alimurung, M. M., and Dimond, E. G.: Phonocardiographic changes in mitral stenosis before and after valvulotomy: A correlation with mitral valve size, Am. Heart J., 53:735, 1957.

37. Vogelpoel, L., and Schire, V.: The role of auscultation in the differentiation of Fallot's tetralogy from severe pulmonary stenosis with intact ventricular septum and right to left intra-atrial shunt, Circulation, 11:714, 1955.

38. Weitzman, D.: The mechanism and significance of the auricular sound, Brit. Heart J., 16:70, 1954.

39. Wells, B.: The assessment of mitral stenosis by phonocardiography, Brit. Heart J., 16:261, 1954.

40. Wolferth, C. C., and Margolies, A.: Gallop rhythm and physiologic third heart sound, Am. Heart J., 8:441, 1933.

41. Wood, P.: Aortic stenosis, Am. J. Cardiol., 1:153, 1958.

Program

FOR

C. M. A. Annual Session

April 30* to May 3

LOS ANGELES

Follows page 202 of this edition

✶

*FIRST MEETING OF HOUSE OF DELEGATES WILL BE HELD SATURDAY, APRIL 29, BEGINNING AT 3:00 P.M.

Regional Isolation Perfusion in the Treatment Of Advanced Malignant Disease

HALE R. TOLLETH, *M.D.*, and JAMES D. COLT, *M.D.*, Bakersfield

• Regional isolation perfusion with an alkylating agent was carried out in a small community hospital, using readily available equipment, ten times in nine cases of advanced malignant disease. Visible regression of tumor, either grossly or histologically, occurred in seven patients and decided subjective improvement occurred in five patients.

The long range effect of the procedure could not be determined in the present series, not enough time having elapsed.

Side effects included jaundice in four patients, massive necrosis of the tumor in one patient, nausea and vomiting in three patients, postoperative edema in five patients, wound infection in two patients, Horner's syndrome in one patient, temporary alopecia in three patients, and depression of hemoglobin level in seven patients, of the leukocyte count in four patients and of the platelet count in four patients.

A feature of the procedure used in the present series was a system of monitoring the escape of alkylating agent into the systemic circulation.

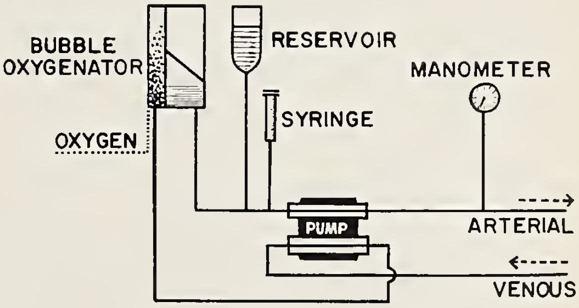
SINCE THE DESCRIPTION in 1931 by Adair and coworkers[1] of the treatment of cancer by local application of mustard compound, many investigators have sought ways to avoid the systemic toxicity of this and similar drugs. A notable advance was made by Klopp, in 1950,[5,17] when he reported that the intra-arterial injection of nitrogen mustard resulted in definite tumor necrosis. Bateman and co-workers in 1951[6] reported that nitrogen mustard was better tolerated when given intra-arterially than intravenously. They believed that obstruction of venous return from the tumor-bearing area was a significant factor in protection of the bone marrow against the effects of alkylating agents.

The original suggestion on utilization of an extracorporeal circulation to increase the dose of chemotherapeutic agents to a tumor-bearing area was made by Klopp and coworkers. Then in 1957 Creech and his associates began surgical isolation and perfusion of various regions. Many reports from this group, since the initial one in 1958,[23] have detailed the basic techniques of isolation perfusion and the early results in treatment of a variety of tumors.[9-13,21,23] Hickey,[15] Woodhall,[26] Austen,[4] Monaco[20] and Stehlin[24,25] have also reported on this method of treatment.

METHOD

Many investigators have reported the use of isolation perfusion in advanced malignant lesions but in general the reports are from large, well-equipped hospitals. The present communication is to describe a method of isolation perfusion carried out with ordinary equipment in a small community hospital, and to give a preliminary report of results obtained in ten perfusion procedures on nine patients.

Although many excellent pumps are available, we used a Sigmamotor pump that has been used as part of a Kolff double coil artificial kidney. A bubble oxygenator,* as developed initially by Hyman,[16] was incorporated into the system. Using outlet tubing† from the artificial kidney, a circuit is formed (see Figure 1) which permits positive pressure on the arterial side and a negative pressure on the venous side, an arrangement that tends to lessen the escape of the antitumor agent from the perfusion circuit into the general circulation. Additional tubing that was needed for connections was available as K-66 tube. An aneroid blood pressure manometer that may be autoclaved without damage is incorporated



EXTRACORPOREAL PERFUSION CIRCUIT

Figure 1.—Scheme of extracorporeal circulation system using Sigmamotor pump and tubing from a Kolff artificial kidney.

Resident in Surgery, Kern County General Hospital (Tolleth); Attending Staff, Kern County General Hospital and Mercy Hospital (Colt.)

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*Available as PulmoPak (Abbott).

†Available as U 200 B tubing (Travenol Labs.).

into the system, in order to monitor pressure. Intravascular catheters of several types§ have been used for vessel cannulation. We believe that the disposability of the system, except for the manometer, is an important characteristic.

When the system has been assembled and each connection wired, the tubing is flushed with normal saline solution and checked for leaks. Then it is primed with 750 cc. to 1,000 cc. of heparinized blood. Approximately 15 minutes before surgical isolation of the involved region, the patient is given heparin, 1.5 mg. per kilogram of body weight. Perfusion is then carried out for 30 to 60 minutes, the time depending on the drug being used, the region and the amount of escape into the general circulation.

When perfusion is completed, the blood containing the alkylating agent is flushed from the system with 500 cc. to 1,000 cc. of dextran. Five hundred to 1,000 cc. of blood that does not contain any antitumor drug is then returned to the isolated region. The catheters are removed, the vessels repaired and the patient given hexadimethrine (Polybrene), 2 mg. per kilogram of body weight, to counteract the previously administered heparin.

During the procedure the escape of the blood containing alkylating agent into the systemic circulation is constantly monitored in the following manner: A radioactive tracer, usually radio-iodinated serum albumin (RISA), is injected into the perfusion system. After it is thoroughly mixed, a base line level of radioactivity within a fixed area of the circuit, usually over the reservoir of the lung, is determined with a scintillation counter. It is then presumed that any loss of radioactivity from the perfusion circuit is due to escape of alkylated blood into the general circulation. With this method, the amount of escape can be quickly and accurately computed at any time and thus allow an adequate but not excessive dose of alkylating agent to be used.

Many drugs have been used in isolation perfusion. We have used three: Mechlorethamine (nitrogen mustard),* cyclophosphamide (Cytoxan)† and phenylalanine mustard (Alkeran).‡ The dosage for each area of the body has varied with the degree of isolation and the amount of escape as it was determined during the perfusion (see Table 1).

We used various rates of flow of the perfusion mixture, from 60 cc. to 250 cc. per minute, governing the rate by maintaining the pressure in the system between 85 and 300 mm. of mercury, depending upon the patient's systemic pressure. A pulsating flow was used except for perfusion of the liver; there a non-pulsatile flow was deemed more physiologic.

TABLE 1.—*Drug Dosage Used in Perfusion Therapy of Surgically Isolated Tumors*

		Mg. per Kg. of Body Weight
Head and neck	Nitrogen mustard	0.55-0.60
Breast	Nitrogen mustard	0.75
Liver	Phenylalanine mustard	1.5
Pelvis	Nitrogen mustard	1.0
	Cytoxan	11.0
Lower extremity	Phenylalanine mustard	1.6

The surgical operation that prepared the tumor site for perfusion had to isolate the region as completely as possible, yet vessels had to be preserved for adequate vascular supply to the region at the end of the procedure. The ideal plan in each area appeared to be elimination of collateral circulation so that during perfusion there would be one artery and one vein entering and leaving the isolated area through which circulation was carried out. With escape of the alkylating agent into general circulation thus partially blocked, larger doses could be used and lesser systemic defects be predicted. However, we found complete isolation to be impractical in most areas. It was almost possible in the liver and in the lower and upper extremity; least possible in the pelvis, the breast and the head and neck.

Lower extremity isolation was carried out through the transperitoneal approach. An iliac node dissection was done, not primarily for removal of metastatic nodes, but to allow complete exclusion of collateral circulation. Not all of the arteries were ligated and transected; many of the larger branches were temporarily loop-tied or cross-clamped with vascular clamps. Four main vessels that were excluded from the perfusion circuit were the iliolumbar, obturator, inferior epigastric and circumflex iliac arteries. An Esmarch bandage tourniquet was placed around the thigh in the gluteal crease and the limb was suspended anteriorly by a special frame, obliterating venous return except through the iliac vein anteriorly. The desired result was an inflow tract through only the external iliac artery and a return through the external iliac vein. The cannulae were secured in the vessels with looped umbilical tapes, and vascular clamps were placed proximally. Upon completion of the perfusion, the cannulae were removed and the incisions in the vessels closed with No. 5-0 arterial silk; loop ties were cut and removed.

Pelvic perfusion required much more dissection because of the bilateral isolation necessary in the true pelvis. The aorta and vena cava were isolated between the level of the bifurcation of the aorta and the origin of the inferior mesenteric artery. Four main branches of the hypogastric artery eliminated from the perfusion circuit were the iliolumbar, su-

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§Bardic & Sterilon—C. R. Bard, Inc.

*Merck, Sharpe & Dohme.

†Contributed by Mead Johnson Co.

‡Contributed by Burroughs Wellcome Co.

TABLE 2.—*Summary of Clinical Data on Perfusion of Ten Malignant Tumors*

No.	Age	Sex	Diagnosis	Drug	Dose (Mg.)	Time (Min.)	Flow Rate (cc./min.)	Escape Rate (Per Cent)	Region Perfused	Vessels Used
1.	73	F	Liposarcoma of the thigh	P*	90	60	240	15	Leg	External iliac artery and vein
2.	48	F	Cystadenocarcinoma of ovary metastatic throughout pelvis	N†	50	45	180	22	Pelvis	Aorta and vena cava
3.	33	F	Carcinoma of cervix stage IV	C‡	500	60	155	32	Pelvis and leg	Aorta and vena cava
4.	69	F	Carcinoma of cervix stage IV	C	1000	55	130	24	Pelvis	Aorta and vena cava
5.	73	F	Liposarcoma of the thigh	P	100	65	170-200	6	Leg	External iliac artery and vein
6.	54	M	Lymphoepithelioma of nasopharynx	N	50	60	50-80	58	Head	External carotid arteries and common facial veins
7.	49	F	Carcinoma of cervix stage IV	C	1000	30	250	20	Pelvis	Aorta and vena cava
8.	34	F	Malignant melanoma of liver	P	75	60	200	2	Liver	Portal vein and hepatic veins
9.	63	F	Squamous carcinoma of breast metastatic to axilla	N	40	35	130	50	Breast and axilla	Subclavian and internal mammary arteries and veins
10.	51	M	Squamous carcinoma post. 1/3 of tongue	N	40	40	80	75	Head and neck	External carotid arteries and common facial veins

*Phenylalanine mustard. †Nitrogen mustard. ‡Cyclophosphamide.

perior gluteal, obturator and inferior gluteal arteries bilaterally. Both external iliac arteries and veins were then cross-clamped and cannulae were inserted into these vessels; perfusion was carried out, the cannulae removed and the vessels closed as before.

In perfusion of the head and neck, the external carotid artery was used. The incision extended from the angle of the jaw on one side, to the angle on the other side, crossing the midline at the level of the thyroid cartilage. Because of the rich anastomosis between the right and left side, both sides had to be included in the inflow and outflow tracts. With tumors of the nasopharynx and soft parts, the external carotid arteries were used as inflow with the superior thyroid, posterior auricular, occipital, superficial temporal and transverse facial arteries being loop-tied, and thus excluded from the perfusion circuit. Perfusion of a lesion involving the tongue required that the external maxillary, the lingual and ascending pharyngeal arteries be left in the perfusion circuit. Venous ligation included the anterior jugular, external jugular below its communications with the common facial vein, the pharyngeal tributaries to the internal jugular, the superior thyroid and lingual branches plus the superficial temporal veins. The common facial vein was used as the outflow tract. The incisions in the vessels were closed as described above.

The liver was the most difficult to isolate, owing to the physiologic and anatomical problems concomitant with such a procedure. The portal blood flow was shunted around the liver to the systemic circulation and the hepatic venous flow was used to drain the liver. By the use of a tubular shunt inside the vena cava, the blood from the lower extremities could be shunted around the liver to the heart; the portion of the vena cava into which the hepatic veins drained was cannulated for use as the outflow tract, thus preventing any blood from this organ from reaching the systemic circulation. The inflow tract used was the portal vein. The hepatic artery was excluded from the perfusion circuit by temporary cross-clamping. Because of the complexity of this procedure it will be described at length in another communication. Suffice it to say that technically the procedure is feasible but difficult.

Breast perfusion entailed a difficult dissection in view of the numerous points of anastomosis about the subclavian artery. We approached these vessels by splitting the sternum and transecting the midportion of the clavicle. The internal mammary artery was used in the perfusion circuit, while the vertebral artery was left in the general circulation. A catheter was inserted through the subclavian artery, in addition to the internal mammary, and the return was carried out through the subclavian and

TABLE 3.—*Summary of Observations on Effect of Perfusion Therapy of Surgically Isolated Malignant Lesions*

No.	Diagnosis	Previous Treatment	Postoperative Complications	Follow-Up
1.	Liposarcoma of thigh.	None. Amputation refused.	Temporary jaundice. Ileus.	Necrosis histologically and decrease in tumor size. Weight gain.
2.	Cystadenocarcinoma ovary, metastatic throughout pelvis.	X-ray to pelvis P32 injection in tumor. P32 intraperitoneal. Unsuccessful attempt at exenteration.	Massive necrosis of tumor and drainage through wound. Alopecia.	Visible regression of vaginal and labial metastases, pain relief and weight gain. Died 5 mos. postop. due to uremia. Given cyclophosphamide postop.
3.	Carcinoma of cervix stage IV.	X-ray 3600 R. Radium 5400 mg. hrs.	Persistent nausea and vomiting (preop. and postop.). Alopecia.	Severe leg and back pain preop. persisted postop. Required neurosurgical relief. Given cyclophosphamide postop. Probable inadequate drug dosage.
4.	Carcinoma of cervix stage IV	None.	None.	Mass necrosed from cervix. Pain relieved completely for 2 months. Discharge decreased, became operable.
5.	Liposarcoma of thigh.	Isolation perfusion (see Case 1).	None.	Further decrease of tumor mass. Probably operable.
6.	Lymphoepithelioma of nasopharynx.	Cobalt 60 7700 R. X-ray 8038 R.	Edema of face and neck. Wound infection. Alopecia.	Relief of intractable pain. Temporary improvement in cranial nerve palsies. Weight gain.
7.	Carcinoma of cervix stage IV (metastatic to vulva and throughout pelvis).	X-ray 2600 R. Radium 5500 mg. hrs.	Temporary jaundice. Edema of legs.	Died 19 days postop. in uremia due to ureteral obstruction. Necrosis of large vulvar metastasis present. Postmortem showed widespread metastases — liver, nodes, omentum.
8.	Malignant melanoma liver (metastatic from the eye).	None.	Died 45 minutes postop. due to cerebral anoxia.	
9.	Squamous carcinoma of breast (metastatic to axilary nodes).	None.	Edema of arm. Temporary jaundice. Temporary Horner's syndrome.	Approximately 80 per cent of tumor necrosed. Axillary metastases regressed. Given radiation and postop. injections of cyclophosphamide immediately adjacent to tumor.
10.	Squamous carcinoma of post 1/3 tongue.	Radiation—amount unknown.	Temporary jaundice. Edema of face and neck.	Died suddenly on 11th postop. day due to tracheal obstruction from inspissated mucus. Histologic evidence of tumor necrosis prior to death.

internal mammary vein. Because of the possibility of poor healing, the sternum was wired and the clavicle ends were approximated with an intermedullary pin. Healing was per primum.

RESULTS

Isolation perfusion treatment was carried out on nine patients, twice in one of them. A summary of data on the patients, the kind and site of lesion, the treatment and preliminary observations of results is given in Tables 2 and 3. In each case the tumor to be treated was considered beyond further treatment by conventional means or the patient had refused conventional treatment. The nature of the lesions varied: a very large liposarcoma of the thigh in an elderly woman who had refused amputation; a lymphoepithelioma of the nasopharynx with chronic severe pain; carcinoma of the cervix, stage IV (three cases); widespread cystadenocarcinoma of the ovary; squamous cell carcinoma in the medial quadrant of the right breast; and massive infiltration of the liver by metastatic malignant melanoma.

Demonstrable changes in the tumor either grossly or histologically were noted in all but one patient. Decided regression in size of the tumor mass or of metastatic lesions was noted in five patients. Disappearance of odor, of bleeding or of discharge of purulent material from the tumor mass was apparent in four patients. Relief of pain, however, was the major subjective improvement in three patients. An example of the changes which occur, in which gross histologic evidence of massive tumor necrosis was present, is shown in Figure 2.

The amount of alkylating agent which escaped into the systemic circulation varied from 2 per cent to 75 per cent depending on the region being perfused (see Chart 1). Hematopoietic depression, to some degree, occurred in all patients; leukopenia with a white blood count between 1,000 and 2,000 cells per cubic mm. occurred in only four patients;

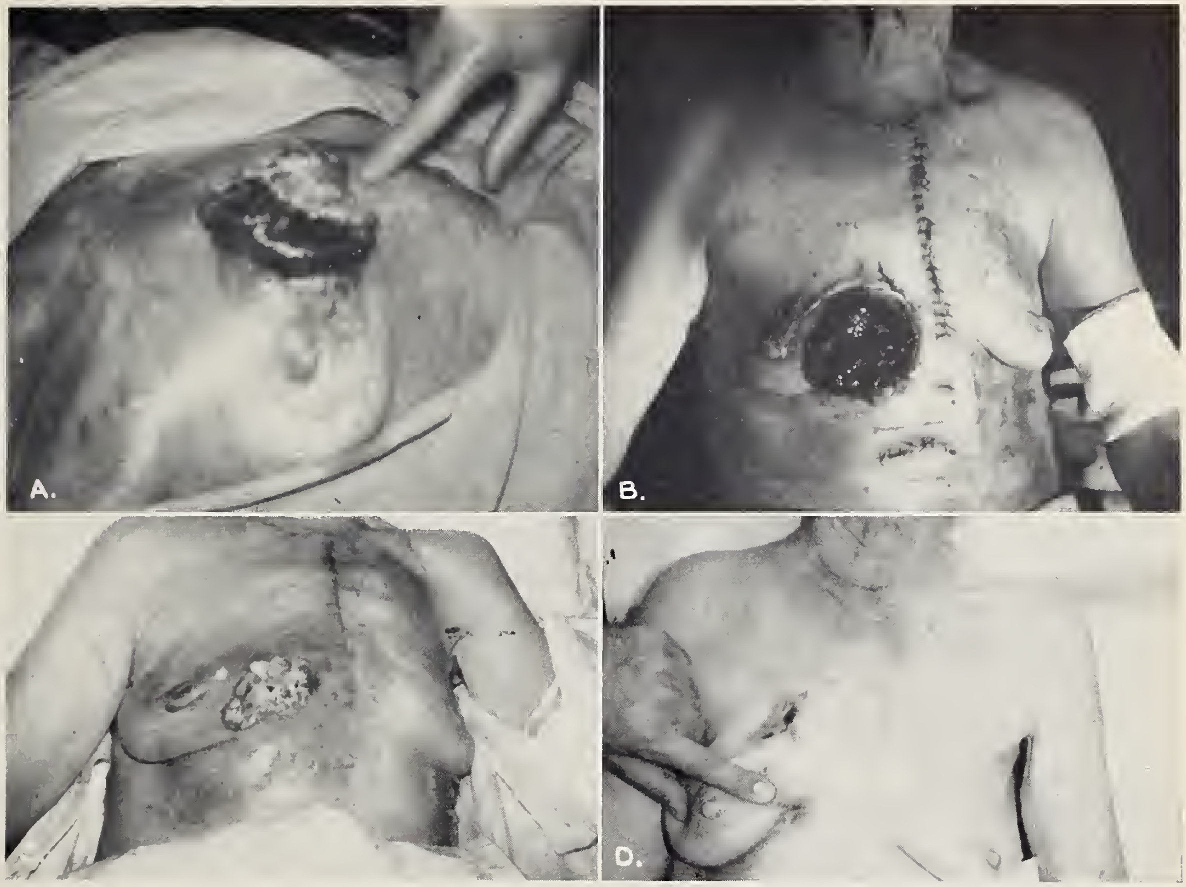

Figure 2.—*A*, ductal carcinoma of right breast before operation; *B*, 72 hours after isolation perfusion with nitrogen mustard, 40 mg.; *C*, five weeks after perfusion, the majority of the lesion having sloughed; *D*, six months after perfusion, the lesion being healed and a biopsy negative for recurrence.

the platelet count fell below 100,000 in four patients and the hemoglobin level fell below 10 grams per 100 cc. in seven patients (See Chart 2). Evidence of abnormal bleeding was not observed. Two patients had wound infection but a relationship with leukopenia was not demonstrable.

Nausea and vomiting, which often occur on the administration of alkylating agents in high dosage,[2,14,22] occurred postoperatively in three patients, one of whom had these symptoms preoperatively. Diarrhea or melena did not occur. Ileus was present in most patients but six of nine patients were taking food by mouth by the third postoperative day.

An unusual problem was present in four patients: Jaundice appeared on the second to fifth postoperative day, then disappeared spontaneously within the following four to five days. All had had liver function tests, the results indicating impairment, before operation. The icterus index did not rise above 25 units in any patient; the transaminase level was elevated in only one case. Bile and urobilinogen were irregularly present in the urine in each of the four. Although serum hepatitis was suspected in one patient, no positive diagnosis could be made. We now believe that the decreased ability of the liver to handle the products of cellular destruction and hemolysis was the basic cause.

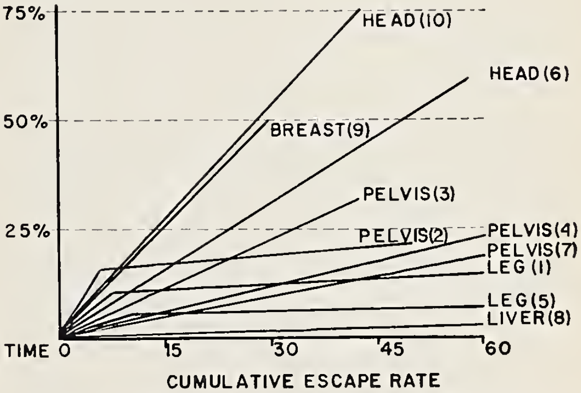

Chart 1.—Proportion of alkylating agent (shown in per cent of total) that escaped into systemic circulation in period (shown in minutes) of perfusion of lesions at various sites. The numbers in parentheses after the location of the lesions refer to the case numbers in Tables 2 and 3.

Wound infection occurred in two patients, on the 15th and 20th postoperative days respectively. One

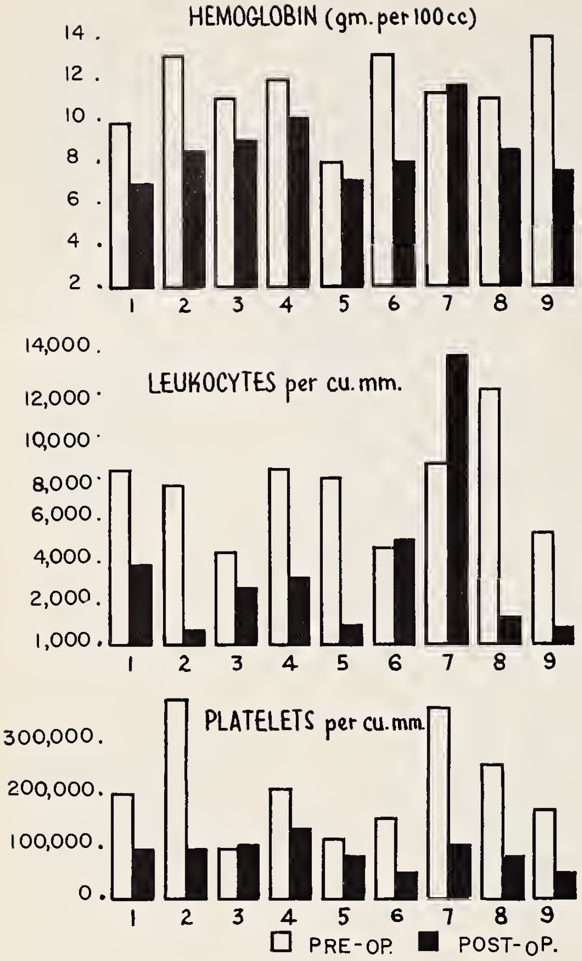

Chart 2.—Highest preoperative and lowest postoperative values for hemoglobin, leukocytes and platelets in nine patients.

had a head and neck perfusion with tracheostomy; in the other, wound dehiscence occurred. A third patient had massive discharge of necrotic material from the wound; infection, however, was not a problem. In the present series delayed wound healing did not appear to be more of a problem than is usually encountered in patients with widespread neoplastic disease and the associated problems of hypoproteinemia and general debility.

Postoperative edema, skin discoloration, erythema and necrosis have been reported in patients receiving high doses of alkylating agents by perfusion.[24] In the present series edema was moderately severe in both head and neck perfusions; in two pelvic perfusions edema of the legs, present preoperatively, became worse; and in the breast perfusion edema and pain of the upper extremity occurred postoperatively. Erythema and desquamation, similar to that of a superficial second degree burn, also occurred in the patient who had a breast perfusion.

Overloading of the circulation due to escape of fluid from the perfusion circuit into the systemic circulation, did not occur. In the liver perfusion, overloading of the systemic circuit due to overtransfusion during the surgical procedure was relieved by draining blood into the perfusion circuit.

Alopecia occurred in three patients, two of whom were given short courses of cyclophosphamide postoperatively. The hair regrew.

In this series of ten isolation perfusions on nine patients, three postoperative deaths occurred. The first patient died approximately one hour after perfusion of the liver, apparently as a result of irreversible hypotension which developed during the operation. The second died 12 days postoperatively as a result of tracheobronchial obstruction due to inspissated mucus, the tracheostomy tube having been removed prematurely. The third patient died on the 19th postoperative day in uremia due to ureteral obstruction. A fourth patient died five months postoperatively from the same cause. Both families refused to permit operative relief of the ureteral obstruction, which in each case was due to tumor. In three of the four cases, then, death could probably have been postponed at least for a short time.

DISCUSSION

Our experience with isolation perfusion operations, although incomplete and imperfect, is such as to encourage further use of the treatment. The gross and microscopic appearance of the tumors gave evidence of tumor destruction. In most of the cases, the patient was considered to have terminal disease for which conventional treatment was no longer feasible. In a few cases regression of symptoms was the most important effect; and although probably temporary, it was a development most pleasing to the patient. Whether comfortable life will be greatly extended cannot yet be determined.

While the procedure requires care, planning and meticulous postoperative observation, it is not beyond the skill of a surgeon trained in vascular procedures. The equipment is not too costly, and disposable supplies can be obtained relatively inexpensively.

The use of the scintillation counter and direct monitoring of escape of the alkylating agent into the systemic circulation seems to us superior to the method in which samples are withdrawn from the patient. Since escape may be determined very rapidly, this method allows the use of an adequate but not excessive dose of alkylating agent and prevents the serious complications of hematopoietic depression, gastrointestinal disorder, electrolyte imbalance and central nervous system toxicity as has previously been reported.[2,6,14,22]

The importance of meticulous surgical isolation and careful preoperative planning of the procedure we believe to be of considerable importance in obtaining a low escape rate.

Although perfusion of the extremities is a relatively simple procedure, areas such as the liver, breast, head and neck and pelvis require considerable more dissection. Perfusion of the liver, in the one case in which it was used was unsuccessful, but our experience led us to believe that it may be a method applicable to malignant lesions that are not successfully treated by other methods. Perfusion of cerebral lesions may offer real advantages in cases in which the tumors are relatively inoperable for anatomic reasons. The same may be true of tumors of the extra-cerebral skull and contents. Perfusion of the extremities seems to offer an excellent method for treatment of melanomas and sarcomas there, one great advantage being that amputation may be avoided.

As yet, of course, clear-cut indications for the operation and its relationships to other modes of therapy have not been well established. As a palliative measure it has appeared to us to be useful in the treatment of severe pain and other symptoms. Also, tumors previously not operable have become technically operable. At present, because of the limited number of patients and lack of comparable control, we are unable to state whether any particular alkylating agent is superior to any other in isolation perfusion procedures.

Kern County General Hospital, 1830 Flower Street, Bakersfield (Tolleth).

REFERENCES

1. Adair, F. E., and Bagg, H. J.: Experimental and clinical studies on the treatment of cancer by dichlorethylsulphide (mustard gas), Ann. Surg., 93:190, 1931.

2. Anslow, W. P., Karnofsky, D. A., Jager, B. V., and Smith, H. W.: Toxicity and pharmacologic action of nitrogen mustard and certain related compounds, J. Pharm. & Exper. Therap., 91:224, 1947.

3. Auerbach, C., and Moser, H.: Effects of oxygen concentration on mutagenic action of nitrogen mustard, Experientia, 7:341, 1951.

4. Austen, W. G., Monaco, A. P., Richardson, G. S., Baker, W. H., Shaw, R. S., and Raker, J. W.: Treatment of malignant pelvic tumors by extracorporeal perfusion with chemotherapeutic agents, N.E.J.M., 261:1037, 1959.

5. Barberio, J. R., Klopp, C. T., Ayres, W. N., and Gross, H. A.: Effects of intra-arterial administration of nitrogen mustard, Cancer, 4:1341, 1951.

6. Bateman, J. C., Klopp, S. T., and Cromer, J. K.: Hematologic effects of regional nitrogen mustard therapy, Blood, 6:26, 1951.

7. Bierman, H. R., Byron, R. L., Jr., and Kelly, K. H.: Therapy of inoperable visceral and regional metastases by intra-arterial catheterization in man, Cancer Res., 11:236, 1951.

8. Coggins, P. R., Ravdin, R. G., and Eisman, S. H.: Clinical pharmacology and preliminary evaluation of Cytoxan, Cancer Chemotherapy Reports, 3:9, 1959.

9. Creech, O. J., Jr., Krementz, E. T., Ryan, R. F., and Winblad, J. N.: Chemotherapy of cancer: Regional perfusion utilizing extracorporeal circuit, Ann. Surg., 148:616, 1958.

10. Creech, O. J., Jr., Krementz, E. T., Ryan, R. F., Reemstma, K., and Winblad, J. N: Experiences with isolation-perfusion technique in treatment of cancer, Ann. Surg., 149:627, 1959.

11. Creech, O. J., Jr., Ryan, R. F., and Krementz, E. T.: Treatment of melanoma by isolation perfusion technique, J.A.M.A., 169:339, 1959.

12. Creech, O. J., Jr., Krementz, E. T., Ryan, R. F., Reemstma, K., Elliot, J. L., and Winblad, J. N.: Perfusion treatment of patients with cancer, J.A.M.A., 171:2069, 1959.

13. Creech, O. J., Jr., Krementz, E. T., Ryan, R. F., Reemstma, K., Winblad, J. N., and Elliot, J. L.: Treatment of cancer by perfusion, A.M.A. Arch. Surg., 79:963, 1959.

14. Gilman, A., and Philips, F. S.: The biologic actions and therapeutic applications of the B-chloroethyl amines and sulfides, Science, 103:409, 1946.

15. Hickey, R. C., Johnson, C. A., Evans, T. C., and Alftine, D.: Cancer palliation, A.M.A. Arch. Surg., 79:416, 1959.

16. Hyman, E. S., Rosenberg, D., Hyman, A. L., Sayegh, S., and Kahle, R.: A simple artificial heart lung; an approach to open heart surgery, J. Louisiana M. Soc., 108:134, 1956.

17. Klopp, C. T., Alford, T. C., Bateman, J., Berry, G. N., and Winship, T.: Fractionated intra-arterial cancer chemotherapy with methyl bis amine hydrochloride: A preliminary report, Ann. Surg., 132:811, 1950.

18. Kuhlman, B. A.: Oxygen and the production of chromosome aberration by chemicals and x-rays, Hereditas, 41:384, 1955.

19. Luck, J. M.: Action of p-[Di(2-chloroethyl)]-amino-L-phenylalanine on Harding Passey mouse tumor, Science, 123:984, 1956.

20. Monaco, A. P., and Austen, W. G.: Treatment of Kaposi's sarcoma of lower extremity by extracorporeal perfusion with chemotherapeutic agents, N.E.J.M., 261:1045, 1959.

21. Reemstma, K., Ryan, R. F., Krementz, E. T., and Creech, O. J., Jr.: Treatment of selected adenocarcinomas by perfusion technique, A.M.A. Arch. Surg., 78:724, 1959.

22. Rhoads, C. P.: Nitrogen mustard in treatment of neoplastic disease, J.A.M.A., 131:656, 1946.

23. Ryan, R. F., Winblad, J., Krementz, E. T., and Creech, O. J., Jr.: Treatment of malignant neoplasms with chemotherapeutic agents utilizing a pump-oxygenator: Technics and early results, Bull. Tulane Med. Fac., 17:133, 1958.

24. Stehlin, J. S., Jr., Clark, R. L., Jr., Smith, J. L., Jr., and White E. C.: Malignant melanoma of the extremities: Experiences with conventional therapy; a new surgical and chemotherapeutic approach with regional perfusion, Cancer, 13:55, 1960.

25. Stehlin, J. S., Jr., Clark, R. L., Jr., White, E. C., Smith, J. L., Jr., Griffin, A. C., Jesse, R. H., and Healey, J. E.: Regional chemotherapy for cancer, Ann. Surg., 151:605, 1960.

26. Woodhall, B., Hall, K., Mahaley, S., Jr., and Jackson, J.: Chemotherapy of brain cancer, Ann. Surg., 150:640, 1959.

Contact Lenses

The Ophthalmologist's Role in Prescription

RICHARD A. WESTSMITH, *M.D.*, San Mateo

• It is the responsibility of ophthalmologists to determine which patients can suitably use contact lenses, to instruct them in care and use of the lenses, to write the prescription and to check the fitting, vision and tolerance of the eyes to avoid injury. This very important component of eye care should not be given over to nonmedical technicians by default.

Patients' acceptance of corneal lenses has increased significantly in the past several years and they are used successfully by a high proportion of persons for whom they are prescribed. Contributing to this progress have been improvement of design, permitting lightness, better fitting and increased tolerance for the lenses, overcoming the "veiling" effect that once was a deterrent and, above all, the fact that the use of fluids is no longer necessary. The greatest impetus for contact lens use, however, has come from the persistent promotional campaign of advertising. A quarter of a million dollars was spent for newspaper advertising of contact lenses last year in Northern California.

Owing to general apathy by the medical profession toward contact lenses, nonmedical technicians have practically taken over this phase of eye care. It is only within the last year or so that California has required a license to fit corneal lenses, and this is not retroactive to include persons who were already fitting them when the law was passed. It is estimated that contact lenses are being prescribed at a rate of about a million per year, and that only 15 to 20 per cent of them are being fitted by physicians.

Not only have ophthalmologists in general been disinterested in corneal lenses, many have actively aspersed them.

What are the reasons for this resistance by physicians? My confreres tell me of several. (1) They are afraid of eye injury. And yet I have observed patients who have worn corneal lenses for six or seven years without any evidence of injury to the cornea and I know of no reported case of permanent damage from the wearing of a contact lens. (2) They believe that too high a number of patients cannot tolerate contact lenses. Yet a recent review showed that over 90 per cent of persons fitted with contact lenses who answered a questionnaire said they were wearing them most of the working day. (3) Some ophthalmologists feel that they may lessen their professional standing by prescribing lenses that are promoted, championed—and oversold—by technicians. Some ophthalmologists are just too busy to take on more chores with doubtful promise. The attitude reflected in these views has the effect of depriving many patients of the real benefits that may be achieved only with corneal lenses.

It seems that ophthalmology must accept the fact that contact lenses are here to stay, that they can be very rewarding to patients, and that it is the responsibility of the ophthalmologist to supervise the fitting and prevent harm to the eye. Further research by the medical profession will result in added improvements.

Ophthalmologists should be aware that in addition to the cosmetic gains of corneal lenses, there are many medical reasons for their being prescribed.

1. In keratoconus, superior vision may be achieved with contact lenses, and the progress of the disease may well be retarded or halted by use of them.

2. In cases of severe refractive errors, such as astigmatism and high myopia, much better vision may be possible with corneal lenses.

3. In persons with high degrees of anisometropia, a real binocular comfort may be achieved for the first time. The possibility of using both eyes together after a monocular cataract extraction has changed much of our thinking about advising such one sided operation. Now there is a real visual reward for such a procedure.

4. Paralytic keratitis is reported to be benefited by the use of protective contact lenses.

5. In patients with subnormal vision, due to corneal scarring, corneal dystrophy, albinism, aniridia and nystagmus, vision may be greatly benefited.

6. The correction of presbyopia by under-correcting the myopia or over-correcting the hypermetropia monocularly has been useful in selected cases. I have been gratified by this arrangement for my own eyes for the past three years. I have worn a +175 corneal

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Presented as part of a discussion on Contact Lenses given before the Section on Eye at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

lens on my left eye for reading, and used my unaided right eye for distance. Contact bifocals have been disappointing to me, although such a development seems like a natural evolution.

7. Patients with allergic sensitivity to the material used in making spectacle frames, or with other facial dermatitis, may get great relief by the use of corneal lenses in place of regular glasses.

8. Some patients with low degrees of muscle imbalance have been helped enough by corneal lenses to permit them to abandon corrective prisms. Since the lenses have no prism effect, it is probable that this astonishing phenomenon is due to the fact that corneal lenses remove peripheral astigmatism, thereby helping peripheral fusion, which in turn reinforces central fusion.

Ophthalmologists should be aware of some contraindications to the use of contact lenses. It is probably wrong to prescribe contact lenses for patients who have recurrent erosion of the cornea or history of symptoms suggesting this diagnosis, or for those with a pterygium or a fleshy pingueculum that is encroaching on the corneal margin, or chronic blepharo-conjunctivitis, active keratitis or allergic conjunctivitis. In general, patients with a bad tremor or a mental problem or moderate nervousness should not have contact lenses. Another group is made up of patients who, lacking motivation or real reward from their use, probably would not be benefited enough to justify contact lenses. In my experience, patients who do not feel a need for conventional eyeglasses most of their waking hours, or who are not convinced that contact lenses would please them, should not be persuaded to try them. Also, I have avoided prescribing contact lenses for children unless they have demonstrated unusual stability and judgment and respect for personal property, but there is a report in the literature of a 7-year-old child who was fitted with a contact lens for monocular aphakia.

The claim that contact lenses arrest or retard the progress of myopia is unfounded. Usually the myopia has ceased to progress anyway by the time these lenses are fitted. In most cases of near-sightedness axial lengthening is the cause of increasing myopia, and the wearing of a corneal lens can have no effect on the process. In some patients with a low degree of myopia, however, increments in myopia may be due to increases in the corneal curvature. This increase may be corrected by wearing a contact lens, which serves in lieu of the corneal face as a refracting surface. When the lens is removed, however, the corneal face returns to its increased curvature, and an additional minus correction is needed.

Certain advice should be given patients who are about to get contact lenses. One thing is that after a few hours of wearing contact lenses they will not be able to see as well with their conventional glasses as they had before. This is a temporary change, depending upon how long the lenses were worn, and is due to a change in the corneal curvature. (It takes about 72 hours for my own K reading* and visual acuity to return to normal.) Another thing that patients should be told is that contact lenses should take the place of regular lenses for most uses, for not many will achieve comfort if they wear their contact lenses irregularly or infrequently. Advising about cleanliness is of utmost importance. Hands should be washed well with soap and water before the lenses are handled, and one must avoid touching the lens with grease, oil or cosmetics. If the lens is exposed to greases, it may be cleaned with lighter fluid, washed well with soap and water and placed in a soaking solution for several hours. When the lenses are removed from the eyes, they should be washed well with water and immersed in a container of the solution. As the plastic material of which lenses are made is wetted with great difficulty, a wetting agent must be used to increase the wetness of the surface. Although saliva is an excellent wetting agent, using it must be forbidden because of its contaminants. When the patient is learning to wear contact lenses, he should not increase the wearing time each day by more than a half hour over the time they were worn the previous day. I have observed several cases in which corneal abrasions resulted from over-zealous early wearing before tolerance was achieved. In such cases, pain does not develop until several hours after the lenses have been removed, owing to a reduction in corneal sensitivity induced by wearing the lenses. The patient should be instructed to return to the ophthalmologist for observation after wearing the lenses for four hours. At this time the vision is examined but the prescription is not changed, unless it is grossly in error. The fit of the lenses should be determined by instilling fluorescein and viewing the eyes with a slit lamp under a cobalt blue light. A central pooling of fluorescein, or the presence of air trapped beneath the lens, indicates the curvature of the corneal lens is too sharp. Too little fluorescein beneath the lens indicates it is too flat. A flat lens tends to abrade the cornea and to slide off position very easily. Any surface abrasions of the cornea should be noted and the technician who prepares the lenses should be advised as to the observation. The patient should be seen again in two weeks for further observation, and at this time, if the lens is settled well against the cornea, mild changes in the prescription may be made to improve vision. The patient should then be observed at monthly intervals for the next four months.

12 North El Camino Real, San Mateo.

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*Keratometer reading of flattest corneal curvature.

Cerebral Palsy

Diagnosis in Young Children

MARGARET HOLDEN JONES, *M.D.*, Los Angeles

• Definite diagnosis of cerebral palsy is usually possible during the first six months of life in the hemiplegic child, but in the paraplegic or quadriplegic it may not be clear until the second half of the first year or later. Diagnosis should include not only type, degree and extent of motor handicap, but also intelligence, personality factors, sensory deficits, seizures and other physical problems.

Diagnosis depends on detecting deviations from normal growth and development, of being aware of a multitude of progressive and other lesions which may simulate, at least early, the "static" group of conditions characterized by motor deficit due to central nervous system disease.

Management involves early positioning, use of special equipment (mainly improvised), sensory stimulation and experience, as well as motor training, evaluation of intelligence and special learning situations to assist in discrimination learning and lengthening of attention span. Nursery schools for mentally capable children from 18 months to 3 years of age assist in developing independence, maturity and growth of personality. Except for patients with very severe mental or physical involvement, competitive employment in adult life is not related so much to the physical handicap as to personality characteristics, traits which are formed in early years.

EARLY DIAGNOSIS of motor handicap due to central nervous system abnormality is particularly important today for two reasons. First, we are gradually acquiring more specific tools for identifying metabolic, endocrine and other conditions early. which in some instances may lead to definitive treatment. Second, as cerebral palsied children grow up, we learn that success in achieving their maximal potential depends almost more on personality development than on overcoming the physical handicap. Therefore, consideration of personality development is as important as training for motor skill.

Cerebral palsy, by definition, includes a group of conditions with a motor handicap due to central nervous system lesions of a nonprogressive nature.

In order to differentiate such lesions of the central nervous system from the many other causes of abnormal motor development, it is important to know whether the child was "normal" for any period after birth. Thus, use of scales of growth and development is essential for purposes of detecting uneven growth patterns. It is helpful to differentiate progress in several areas rather than to give a global estimate of level of achievement. From scales such as those of Gesell,[11,25] Griffiths,[12] Watson and Lowry[31] or Shirley[9] the physician should select one that he prefers and should become so familiar with it that he can readily rate infants as to locomotion, hand use. speech and personal-social development. Some years ago, at the Children's Hospital in Los Angeles, with the assistance of Dr. Russell Sands, the staff of the Cerebral Palsy Diagnostic and Treatment Clinic compiled a simple outline based mainly on the Gesell scales.[18] This was found useful in quick evaluation of developmental level. The scales thus compiled are reproduced at the end of this article. Data from such scales or others in which developmental status can be related to chronological age were then entered on a chart whose abscissa was age and whose ordinates were factors of physical development related to age and of achievements also related to age. These included locomotion, self-help, speech, personal-social development, mental age and Vineland Social Maturity rating.[8] Chart 1 is an example of this kind of chart. If the child's development in all areas is at age level, the data will fall on a horizontal line. The data recorded in Chart 1 show average height, weight and head size for age but pronounced retardation in locomotion and speech, although normal mentality. This uneven development is frequently seen in cerebral palsy.

The following outline is suggested for a minimal neurological examination of the newborn. In the order outlined it can be carried out quickly and with minimal handling of the infant.

Suggested Procedure for Neonatal Examination

Position of Child	Examination
Supine:	Asymmetry—head, face, palpebral fissure. Spontaneous activity—head, face, trunk, extremities. Vision—blink, eye following, pupils, lens. Auropalpebral reflex or startle to loud noise.

Presented before the Section on Pediatrics at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Rooting-sucking reflex.
Grasp—palmar, toe.
Patella reflex—ankle clonus.
Traction response—(head lag on pulling forward by arms).
Moro (note asymmetry and completeness).

Upright: Stepping—body in slight forward flexion.
Placing—dorsum of foot under table edge, child places foot on top of table.

Prone: Neonatal head turning.

It is important to note on the record also:

1. Conditions during examination, and time of day, as well as date.
2. General muscle tone.
3. Anomalies or congenital malformations or skin defects.

Thomas and Dargassies[28] stressed the need of repeated neurological examinations in the newborn if any abnormality is noted, for change is particularly significant—for example, change in the Moro response, such as disappearance of the response after it has once been obtained in the newborn, which is a phenomenon that may occur with increasing intracranial pressure.

Some transitory postural and righting reflexes and the normal ages at which they are found are:[7]

Transitory Reflexes

Moro	3 months
Rooting and sucking	12 months
Grasp, palm	3 to 4 months
Grasp, toe	9 to 11 months
Asymmetrical tonic, neck	3 to 6 months
Landau	10 to 28 months
Tongue retrusion	One month, more or less
Stepping	2 to 7 months

Ingram suggested that maturation of neuromuscular development is slower and may cease at a relatively primitive stage in cerebral palsied children.[17]

If delay in development or persistence of transitory reflexes beyond the normal period is noted, there are many conditions[7] to be differentiated before management is planned on the basis of a "static" type of central nervous system lesion.

Ten general kinds of conditions to be considered in differential diagnosis in cases of delayed motor development are:

Mental retardation.
Metabolic and endocrine defects.
Progressive degeneration of central nervous system.
Infectious disease (subacute or chronic).
Neurocutaneous lesion with associated central nervous system abnormality.
Dysrhaphic states—abnormality of skull or spine.
Cord and spinal injuries.
Tumors and other intracranial lesions.
Primary muscle disease.
Emotional or behavior problems.

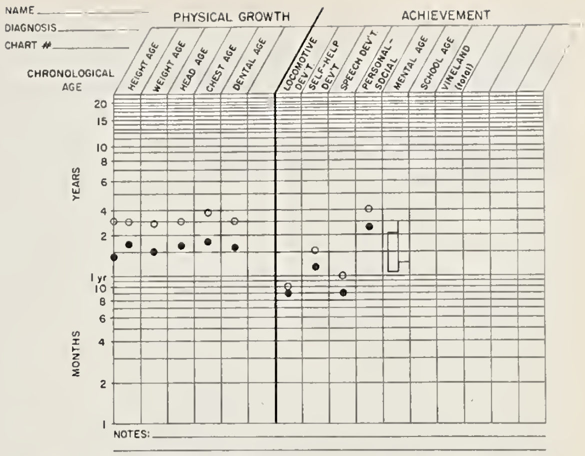

Chart 1.—Summary chart of growth and achievement.

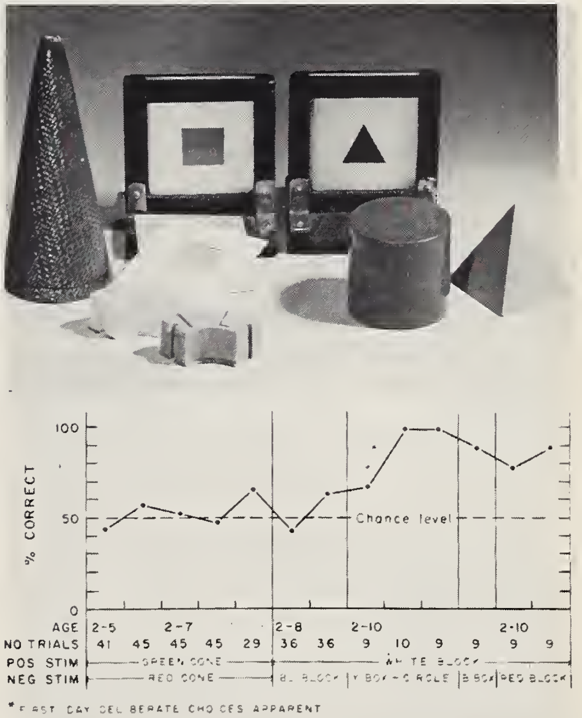

Figure 1.—Objects used for discrimination learning. Below, chart of results of discrimination learning trials.

Once diagnosis of a nonprogressive lesion is made, particularly if it is severe in degree, it is important to evaluate vision and hearing before attempting to assess intelligence. This often means observation in a relaxed situation, as in a nursery for cerebral palsied children, in addition to the office evaluation. In some children there is a constant delay of seconds following a question. One must wait for a response rather than going quickly from question to question.

It is possible to estimate speech reception level by the use of special scales even if no speech has been achieved.[6]

Evaluation of psychometric test-retest results in children from a year and a half to three years of age indicates good reliability.[21,32] Testing of a nonverbal child's understanding is most difficult. Preliminary studies in 2-year-olds without speech indicate discrimination learning ability after a rather extensive period of training.[1] Objects used for this training (Figure 1) are of varied colors, shapes and forms. Each has a hollow base under which a reward is placed. As noted in the graph beneath the picture, at the start of testing the child could not make the right choice simply on the basis of a difference in color between the otherwise similar objects, but after a series of choices of one of two decidedly disparate objects, this child was then able to choose by color alone.

In a severely physically retarded child, hypotonia may later change to hypertonia if cerebral palsy is of the spastic type. In athetoid conditions, muscle tension and athetoid movements become evident after the second or third year of life.[16]

Because management varies with the motor problem, the clinical type of motor deficit should be determined, although it is not always possible to do this in early infancy. Characteristics of each of the commonly differentiated types are given below:[14]

Spastic—Exaggerated patella jerk, ankle clonus; adductor spasm of hips; clenched hand after 2 to 3 months.

Athetoid—Delayed motor development early, especially head holding; persistent asymmetrical tonic neck reflex; characteristic athetoid movements may be delayed until 3 to 4 years.

Ataxic—Delayed motor development; hypotonia; terminal ataxia, hand—4 to 5 months.

Tremor—May be found early.

Rigidity—Stiffness after first few days; patella jerks normal; grossly retarded development.

Some clinical correlates are frequently found, and knowledge of them may be helpful in evaluating the clinical types of motor deficit in the young infant.[24]

Clinical Correlates

Prematurity—Spastic paraplegia (often observed after 6 months).

Hyperbilirubinemia—Athetosis (often with deafness and poor vertical eye control).

Severe anoxia at birth—Athetosis.

Sensory testing of the infant involves more than response to pinprick. However, if a pin is used, the type of response can offer a clue to developmental age. McGraw[22] observed the following reactions in a series of normal infants:

Newborn or diffuse response	to 1 month
Inhibition of the diffuse response	1 to 3 months
General localization (deliberate withdrawal)	6 to 13 months
Specific localization	8 months on

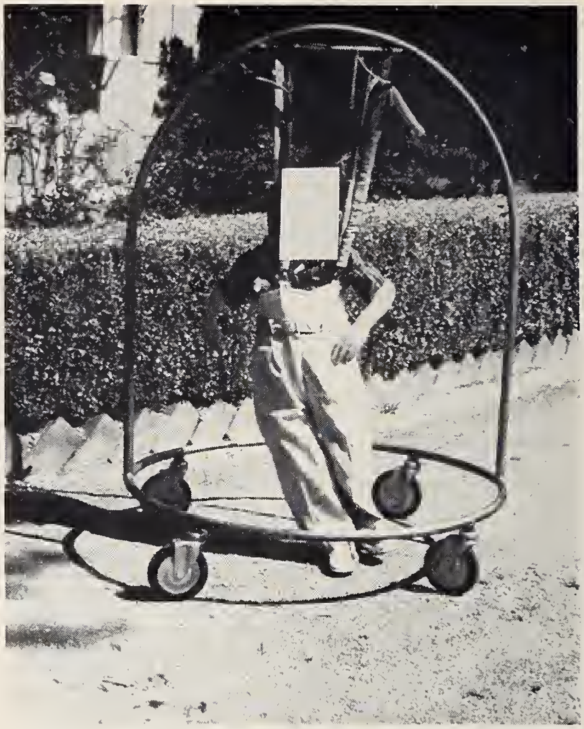

Figure 2.—Child in posture trainer jacket with overhead four point suspension on movable frame. The jacket is similar to jumper swing, fits snugly as a corset and extends almost to axillae. The anterior and posterior rings of the harness can be tied together over the shoulders and this strap attached to the back of an ordinary chair to promote good sitting position and security in sitting.

In addition to pinprick testing, much more information can be gained, especially in hemiplegics, by observing reaction to light touch (feather, cotton or brush), by noting appreciation of a small object, such as a pencil or penny, placed first in the affected hand, then in the other, and by the response to passive movement of fingers and hand.[20]

Tizard and coworkers[29] demonstrated that sensory deficit is directly related to skeletal undergrowth (length) of the extremity. Of 16 hemiplegics with skeletal undergrowth, 14 had sensory deficit and hemianopsia; conversely, of 12 with no growth deficit, only two had sensory loss and hemianopsia.

Tachdjian and Minear[27] reported an inverse ratio of sensory loss and functional use of the extremity in hemiplegic patients. Among those with no use of the hands, 87.5 per cent had sensory loss, while 6.6 per cent of patients with good use of the hands had sensory loss.

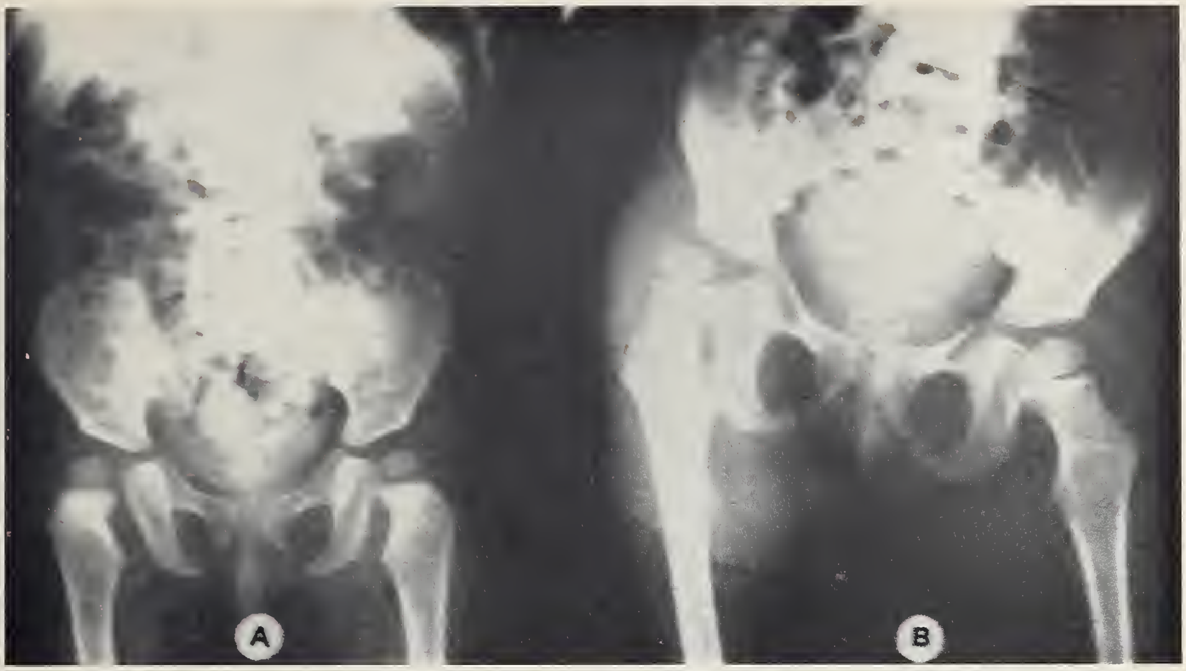

Figure 3.—X-ray films of pelvis to show migration of femoral head. Tension athetoid cerebral palsy with subluxed right femoral head *A*, at age 1 year; *B*, at age 3½ years. Note: Valgus of femoral neck on right, 165°. Acetabular index normal.

MANAGEMENT OF YOUNG PALSIED CHILDREN

Management of a cerebral palsied child under three years of age involves parent cooperation in working toward maximal independence within the capability of the particular child. He must be provided with opportunity for sensory and social experiences, as well as training in motor skills. Understanding of his psychological problems, and assistance with solving them, are needed. Special facilities are needed for him at home, and in some instances at nursery school. Because of the persistence of postural and righting reflexes beyond the normal time, positioning of the cerebral palsied infant to help overcome these reflexes and to allow the baby to experience normal patterns of motion for age is suggested.[3] Such positioning can be taught to the parent and carried out at home.

A posture jacket[19] or a jump swing (Figure 2) may allow practice in head balance and better arm and hand use, as well as promote intercostal breathing by allowing the child to be in an upright position. The anterior and posterior rings of the harness can be tied together over the shoulders and this strap attached to the back of an ordinary chair to promote good sitting position and security in sitting. Because the motor deficit prevents normal exploration of the environment, sensory stimulation and experience need to be carefully planned for the toddler age child.

Treatment for cerebral palsy of the spastic type includes promotion of full range of motion and prevention of contractures. Braces may be needed. Training may also involve sensory stimulation if sensory deficit is present.

In athetoid patients, overcoming of persistent postural and righting reflexes, relaxation and muscle strengthening may be needed.

In ataxic children, balance training and often muscle strengthening are helpful if the condition is severe; if mild, and the child has normal eye movements, balance will tend to develop spontaneously.

It is particularly important to evaluate various types of sensory as well as motor abnormality, and also to consider intelligence, seizures and personality factors, before making a treatment plan for a palsied child.[2] Personality characteristics, particularly immaturity and dependence, have been found to be major factors in failure or success in adult life. At least half of cerebral palsied patients have a significant learning deficit.

Care at home of a severely physically retarded infant is difficult and obviously will become more so as the child becomes older and heavier. One must remember, however, that in a child of this type fever often develops without demonstrable cause when the child is placed in a hospital or other institution. Although self-sufficiency or competitive employment is not to be expected of severely physically retarded children, some of those with good intelligence may become partially self sufficient and do simple tasks, particularly if adaptive equipment can be improvised to help them—for example, a resistance feeder[13] or a special electric typewriter.[30]

Nursery schools for alert cerebral palsied children from one and a half to three years of age have been developed to offer an opportunity for socialization, for beginning independence and for integration of physical, occupational and speech therapy in the activities of everyday living. Trained nursery school teachers are responsible for the programs in the nursery schools. Therapists work closely with the teacher, often in the classroom. By observing their own and other children in the nursery school setting, parents can see their child in a more objective way.

Orthopedic consultation is needed for braces. Surgical treatment may be essential, especially if contractures leading to deformities develop. Unequal muscle pull about a joint, particularly the hip, may result in migration of the femoral head[23] (Figure 3).

Drugs have been reported to aid in relaxation, especially meprobamate[5] and N-isopropyl-2-methyl-2-propyl-1, 3-propanediol dicarbamate (Soma®).[26] Dextroamphetamine[4] often quiets a hyperactive child. Chloral hydrate, with a small dose of chlorpromazine, 5 to 10 mg., often provides satisfactory short-term sedation, such as might be needed for an electroencephalogram.

U.C.L.A. Medical Center, Los Angeles 24.

APPRAISAL SCALES

FROM: *Appraisal of Progress in the Cerebral Palsied Child, United Cerebral Palsy Association of Los Angeles County, November 1952 (Ref. No. 18).*

SCALE 1.—*Locomotive Development**

- 4 weeks—Prone position—lifts head momentarily.
- 16 weeks—Sits with back support—holds head erect.
- 24 weeks—Rolls over (either way).
- 28 weeks—Sits in high chair (not in special chair)—with or without braces—not tied in.
- 32 weeks—Progresses on floor (on abdomen or back).
- 36 weeks—Sits alone (includes getting to sitting) on floor, low mat or stool.
- 40 weeks—Stands holding on (if put in that position). Creeps on hands and knees—abdomen off floor.
- 52 weeks—Walking with one hand support.
- 15 months—Stands alone (includes getting up from sitting and sitting again).
- 18 months—Walks alone (includes stepping and starting with or without canes or crutches—not walker).
- 2 years—Walks downstairs holding rail. Runs 50 feet without falling.
- 2½ years—Jumps 2 feet.
- 3 years—Climbs stairs, alternate feet, no assistance. One foot momentary balance—eyes open.
- 4 years—Skips on one foot (either one or both).
- 5 years—Skips alternately.
- 6 years—Jumps from 12-inch step without losing balance. Stands on alternate feet, eyes closed. Climbs.

Note: Since we agree with those at the Hartwell Clinic, Rochester, New York, that "a normal six-year-old has all the motor abilities necessary for physical independence and for future economic independence," we have considered the older child adequate in locomotor development if he is able to reach this level.

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*Star indicates success achieved if accomplished only with braces on.

SCALE 2.—*Self-Help Development*

- 4 weeks—Brief eye following.
- 16 weeks—Holds rattle when placed in hand. Momentary passive regard.
- 24 weeks—Eyes follow objects. Crude grasping.
- 28 weeks—Bilateral grasping—shakes rattle—grasps one inch cube.
- 32 weeks—Extends one arm in reaching.
- 36 weeks—Grasps with whole hand.
- 40 weeks—Hand feeding—pat-a-cake.
    - Reach and grasp for near objects.
    - Picks up ¼-inch pellet with thumb and opposing finger.
- 52 weeks—Picks up spoon.
    - Takes off some clothes—cooperates in dressing.
- 15 months—Puts on simple clothes.
    - Puts ¼-inch pellet in bottles with 2-inch opening—without assistance.
- 18 months—Builds tower of 3 one-inch cubes.
    - Scribbles—imitates vertical stroke.
    - Holds glass or cup with two hands—begins to feed self with spoon.
- 2 years—Turns singly 4 out of 6 thick pages of child's book.
    - Holds glass or cup with one hand.
    - Builds tower of 6 one-inch cubes.
- 2½ years—Helps dress and undress.
    - Holds regular-sized crayon with finger grip.
    - Builds tower of 8 cubes.
- 3 years—Feeds self with little spilling.
    - Removes pants—unbuttons front and side buttons.
- 4 years—Drawing—some attention to details.
    - Brush teeth with little assistance and wash face alone.
    - Dress, undress with little assistance.
    - Cares for self at toilet.
- 5 years—Laces shoes and ties bow knot.
    - Print some capital letters.
    - Drawing—color outline picture.
    - Handedness well-established.
- 6 years—Uses table knife for spreading.
    - Winds two yards light wool yarn on wooden spool in 15 seconds (spool 1½ inches long and one-inch in diameter not including raised edges at ends of spool).
    - Places 45 pegs in board in 45 seconds (pegs, metal ⅛ inch by 2 inches—holes ¾ inches apart—pegs placed in deep saucer at start).

7 years—Washes self fairly completely.
Uses knife for cutting.
Combs or brushes hair.
Can bat ball three times out of five.
8 years—Bathes self unaided.
Uses fork and spoon pronatedly.
Uses tools or utensils in helpful household tasks, as fastening hook, nailing or screwing.
9 years—Cares for self at table.
Penmanship smaller and with less pressure.
Lifts heavy object, as 10 lb. bag, carries it 15 feet.
Plays ping pong—returning served ball 2 times in succession.
10 years—Pays attention to grooming (especially girls).
Writes occasional short letters.
11 years—Does simple creative work.
12-15 years—Exercises complete care of dress.

Note: Since the Vineland Scale has no self-help items in dressing, eating or general self-help over the age of 15 years, we will consider that this level of achievement is satisfactory for adult self-help and independence.

SCALE 3.—*Speech Development*

4 weeks—Small throaty sounds.
16 weeks—Coos and laughs aloud.
24 weeks—Spontaneous vocalization.
28 weeks—M-M sound—crying—squeals.
32 weeks—Single syllable—Da—Ba—Ka.
36 weeks—Imitates sound.
40 weeks—DADA—MAMA—Plus one word.
52 weeks—DADA—MAMA—Plus two words.
15 months—Four to six words.
18 months—Ten words—jargon.
2 years—Joins two and three words.
2½ years—Repetition of phrases and pronouns.
3 years—Sentences.
4 years—Sounds mastered—b, p, m, w, h.
5 years—Sounds mastered—d, t, n, g, k, ng, y.
6 years—Sounds mastered—f.
7 years—Mastery of v, th, zh, sh, l.
8 years—Mastery of z, s, r, wh, th (unvoiced).

Note: Since this level of achievement is considered adequate for oral communication both for child and adult, the older age groups are considered normal in speech if they have reached this level.

SCALE 4.—*Personal-Social Development*

4 weeks—Fleeting facial responses (brightens or darkens) to social approach.
16 weeks—Laughs aloud, "recognizes" mother. Relishes sitting position.
24 weeks—Discriminates strangers.
28 weeks—Concentrates on single toy.
32 weeks—Bites and chews toys.
36 weeks—Holds own bottle or feeds self cookie or cracker.
40 weeks—Nursery tricks—pat-a-cake.
52 weeks—Imitates or repeats performance laughed at. Influences emotions of others.
15 months—Recognizes own product of elimination after the act.
18 months—Resistant to changes and sudden transition. Pretends to read. Toilet trained for bowel control. Likes to pull toys. Carries or brings doll.
2 years—Distinguishes "mine" and "me." May fetch and carry. Pulls on simple garment.
3 years—Bargains. Tries to please. Begins to wait his turn. Shares toys.
4 years—Likes associative group play better than parallel. Alibis. Fabricates. Bosses. Goes about neighborhood unattended.
5 years—Knows own name. Likes to finish things started. Favorite toys: tricycle, crayon, scissors.
6 years—Begins exploration of outside social world. Is influenced by boy or girl down the street.
7 years—Finds heroes outside the family. Tells time to ¼ hour. Participates in pre-adolescent play (Vineland Scale).
8 years—Reads on own initiative. Does routine household tasks. Prefer same sex as companions.
9 years—Makes minor purchases. Emergence into gang groups.
10 years—Answers ads—purchases by mail. Does small remunerative work. Makes telephone calls. Identifies self with specific gang—may be leader of group.
11 years—Enjoys books, newspapers, magazines. Is left to care for self and others.
12-15 years—Plays difficult games (Vineland). Performs responsible routine chores. Engages in adolescent group activities (Vineland).
15-18 years—Communicates by letter. Follows current events. Goes to nearby places alone. Goes out unsupervised in daytime. Has own spending money and buys all own clothes.
18-21 years—Goes to distant points alone. Looks after own health. Has a job or continued schooling. Goes out nights unrestricted. Controls own major expenditures. Assumes personal responsibility.

REFERENCES

1. Bartoshuk, A. K., and Helmy, J. A.: Unpublished data, U.C.L.A.

2. Blumberg, M. L.: Emotional and personality development in neuromuscular disorders, A.M.A. J. Dis. of Child. 98:3, 303-310, 1959.

3. Bobath, K., and Bobath, B. O.: Treatment of cerebral palsy by the inhibition of abnormal reflex action, Br. Orthop. J. 11:88-99, 1954.

4. Bradley, C.: Characteristics and management of children with behavior disorders associated with organic brain damage, Ped. Clinics of N. Amer., 1049-1060, Nov. 1957.

5. Carter, C. H.: The effect of meprobamate on brain damaged patients, Amer. J. of Med. Sciences, 235:6, 632, 1958.

6. D'Asaro, M., Jones, M. H., Lehrhoff, J., Zimmerman, I. L.: A rating scale for the evaluation of language development in the preschool cerebral palsied child, J. Bone and Joint Surgery. 39A 1219, 1957. (Abstract) (Proc. Amer. Acad. for Cerebral Palsy).

7. Dekaban, A.: Neurology of Infancy, Williams & Wilkins Co., 1959.

8. Denhoff, E., and Jones, M. H.: Rehabilitation of neuromuscular disturbances, Pediatrics, 20:165-169, 1957.

9. Faegre, M. E., and Anderson, J. E.: Child Care and Training, University of Minnesota Press, 8th Edition, 1958.

10. Fish, Barbara: Longitudinal observations of biological deviations in a schizophrenic infant, Amer. J. of Psychiatry, 116:25-31, 1959.

11. Gesell and Amatruda: Developmental Diagnosis, Hoeber, 1947.

12. Griffiths, Ruth: The Abilities of Babies, McGraw-Hill, 1954.

13. Holser, P.: Upper extremity control brace, Amer. J. of Occupational Therapy, 13:4, July-August, 1959.

14. Illingworth, R. S.: Early diagnosis of cerebral palsy, Cerebral Palsy Review, No. 2:6-8, Summer 1958.

15. Illingworth, R. S.: Recent Advances in Cerebral Palsy, Little, Brown & Co., 1958.

16. Ingram, T. T. S.: Early manifestations and course of diplegia in childhood, Arch. of Dis. in Childhood, 30:244, 1955.

17. Ingram, T. T. S.: Muscle tone and posture in infancy, Cerebral Palsy Bulletin, 5:6-15, Spring 1959.

18. Jones, M. H.: Appraisal of progress in the cerebral palsied child, United Cerebral Palsy Assn. of Los Angeles County, November 1952.

19. Jones, M. H.: Posture trainer, Exhibit—American Academy for Cerebral Palsy, Los Angeles, 1959. (Jacket obtainable through Mr. LeRoy Noble, P.O. Box 867, Whittier, Calif.)

20. Jones, M. H.: Management of hemiplegic children with peripheral sensory loss, Pediatric Clinics of North America, 7:3 (pages 765-776), 1960.

21. Koch, F. P.: A nursery school for children with cerebral palsy, Pediatrics, 22:2, 329-335, 1958.

22. McGraw, M. B.: The Neuromuscular Maturation of the Human Infant, Columbia University Press, 1943.

23. Mathews, S. S., Jones, M. H., and Sperling, S. C.: Hip derangement seen in cerebral palsied children. Amer. J. of Phys. Med., 32:4, 213-221, 1953.

24. Perlstein, M. A.: Infantile cerebral palsy classification and clinical correlations, J. of Amer. Med. Assn., 149:30, 1952.

25. Ruess, A. L., Dally, A., Lis, E. F.: The Gesell developmental schedules and the physically handicapped child, Amer. J. of Occup. Ther., XIII:3, May-June 1959.

26. Spears, C. E.: The Clinical Evaluation of Carisoprodal in Cerebral Palsy, to be published in The Pharmacology and Clinical Usefulness of Carisoprodal, Ed. J. G. Miller, Wayne State University Press, Detroit.

27. Tachdjian, M. O., and Minear, W.: Sensory disturbances in the hands of cerebral palsied children, J. of Bone and Joint Surgery, 40A, 85-90, 1958.

28. Thomas, A., and Dargassies, Mme. la Dr. Saint-Anne: Études Neurologiques sur le Nouveau-Né, Masson et Cie, Olivier Perrin, Paris, 1952.*

29. Tizard, J. P. M., Paine, R. S., Crothers, C.: Disturbances in sensation in children with hemiplegia, J. of Amer. Med. Assn., 155:7, 628-632, 1954.

30. Visual Touch Electrical Typing, School for Cerebral Palsied Children, Northern California, San Francisco. (Exhibit American Academy for Cerebral Palsy, Los Angeles, 1959.)

31. Watson, E. H., and Lowry, G. H.: Growth and Development of Children, Year Book Publishers, Chicago, 1958.

32. Zimmerman, I. L., and Jones, M. H.: Changes in "developmental ratings" of cerebral palsied children with and without nursery school training, Amer. Psychologist, 12:548 (Abstract) 1957.

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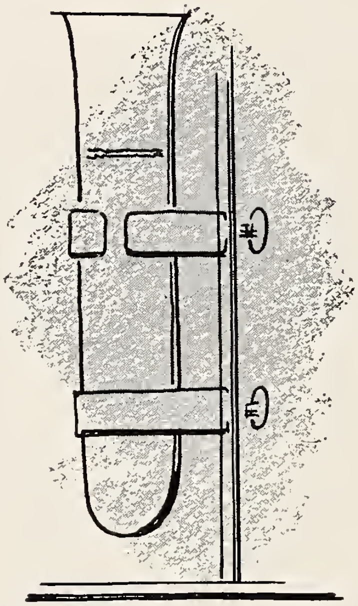
*Abbreviated English version obtainable through National Spastics Society, 28 Fitzroy Square, London W1.



Nasopharyngeal Cancer

Five-Year Results of Treatment with Intracavitary Cobalt^{60}

JEROME M. VAETH, *M.D.*, and FRANZ BUSCHKE, *M.D.*, San Francisco

• Seven of twenty-two patients treated with intracavitary Co^{60} therapy for nasopharyngeal neoplasms remained controlled for more than five years.

No patient treated with intracavitary Co^{60} therapy alone has remained alive.

Of the seven surviving patients, four received external irradiation in conjunction with intracavitary therapy in doses which in themselves may well have controlled the disease, and the contribution of the intracavitary therapy cannot be assessed.

Of ten patients treated for disease, recurrent or uncontrolled, following external irradiation, intracavitary therapy was effective for control of the disease for five years in two patients. One of these patients has no demonstrable disease ten years after the last treatment. The other is alive but with recurrent local disease nine years and eight months after the last treatment.

Analysis of the material agreed with the long established experience that intracavitary irradiation for nasopharyngeal tumors is occasionally helpful in the treatment of limited mucosal recurrence or as an adjunct complementing medium-volt external irradiation. For the definitive treatment of untreated nasopharyngeal neoplasms, reliance in control is placed on thorough external irradiation of nasopharynx and regional lymphatics.

THE RECORDS OF PATIENTS with nasopharyngeal tumors treated at the University of California Hospital, San Francisco, from 1932 to 1955 were recently reviewed in detail.[4] Included in this group were 22 patients treated between 1947 and 1955 by intracavitary Co^{60} following intranasal septectomy and electrodesiccation. For details of the technique, we refer to Morrison's description in 1951,[2] and to the publications of Sooy[3] and Deatsch[1] in 1956. Since this technique, with its emphasis on intracavitary treatment, is in principle at variance with the more commonly accepted procedures which stress external irradiation, a brief presentation of the now available long term results in this small group seems of interest (Table 1).

RESULTS

Four patients were treated by intracavitary Co^{60} to the nasopharynx only (without external irradiation to either nasopharynx or regional lymphatics): In one case the lesion was melanoma, in one lymphoepithelioma, in one anaplastic epidermoid and in one epidermoid carcinoma—the latter three with unilateral adenopathy. All died of uncontrolled disease of the nasopharynx.

Of seven patients treated by a combination of external irradiation and intracavitary Co^{60}, four remained symptom-free more than five years: Three with "transitional cell carcinomas" (two with unilateral adenopathy, one with sixth nerve paralysis) and one with lymphosarcoma without adenopathy. All four survivors had received external irradiation with doses to the nasopharynx and lymph nodes in excess of 4,000 roentgens. The patient who had cranial nerve involvement at the time of treatment had recurrent nasopharyngeal tumor ten years after therapy.

Of ten patients in whom septectomy, cauterization and intracavitary Co^{60} were administered because of obvious recurrent or residual disease at the primary site, two survived more than five years without further recurrent or progressive disease. One of these two survivors, a patient with lymphoepithelioma, originally without lymphadenopathy, was first treated with external roentgenotherapy, a tumor dose of 4,000 r in four weeks. Fourteen months later, recurrence developed at the primary site which was treated with intracavitary cobalt (5,000 r) and electrodesiccation. After another six months it recurred again. Retreatment with intracavitary Co^{60}, 4,000 r, led to control of the nasopharyngeal disease to date (ten years since last treatment). The second patient, with transitional cell carcinoma, was treated with external roentgenotherapy and seven months later presented recurrent disease. Electrodesiccation, septectomy, and intracavitary Co^{60}, 6,000 r, resulted in control of this patient's recurrence for nine years and eight months. At this time recurrence developed again at the primary site. The patient is alive now, three months since the appearance of this recurrence.

One patient with lymphoepithelioma who was treated with external medium voltage radiation to the nasopharynx (estimated dose: 2,500 r in six

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From the Department of Radiology, University of California School of Medicine, San Francisco.

TABLE 1.—*Five-Year Results of Intracavitary Cobalt^{60} in Nasopharyngeal Cancer*

	No. of Patients	No. of 5-Year Survivors	
1. Intracavitary Co^{60} alone to nasopharynx.	4	0	All died of nasopharyngeal disease.
2. Intracavitary Co^{60} combined with external irradiation.	7	4	3 survived; free of disease. 1 alive 10 years later with recurrence.
3. Intracavitary Co^{60} alone for local recurrence.	10	2	1 lymphoepithelioma. After initial x-ray 4,000 r tumor dose, recurrent 16 months (Co^{60}, 5,000. r) and 19 months (Co^{60}, 4,000 r). Patient well today, 10 years after last treatment. 1 transitional cell carcinoma. After initial x-ray 4,000 r tumor dose recurrent at 7 months (Co^{60}, 6,000 r). Patient alive but with recurrence 9 years 8 months after Co^{60} treatment.
4. Intracavitary Co^{60} combined with external roentgen therapy for local recurrence.	1	1	1 died 7½ years after initial roentgen therapy 2,500 r tumor dose (4 years after retreatment of recurrence, Co^{60}).

weeks), returned three years later with local recurrence. He was retreated by two intracavitary applications of Co^{60}, followed by 250 kilovolt external irradiation to the nasopharynx (estimated dose midnasopharynx: 6,000 r in four weeks). The disease remained controlled temporarily but recurred locally four years after the retreatment, or seven and a half years after the first course of roentgenotherapy.

DISCUSSION

From review of this material, it would appear that intracavitary nasopharyngeal irradiation with Co^{60} has controlled locally recurring or uncontrolled disease following external irradiation in one instance. In four cases of survival following combined external and intracavitary treatment, it is possible that Co^{60} contributed to the results by increasing the local dose. Its role cannot be assessed, however, because in these cases external irradiation possibly would have been sufficient for local control.

When using medium-volt therapy it is at times difficult to introduce an adequate dose into the nasopharynx because about 25 per cent of the energy is absorbed in bone. Particularly in the treatment of the more differentiated tumors, we have, therefore, for many years complemented external irradiation by intracavitary radium application in selected cases, without difficulty and without preceding septectomy. Intracavitary therapy has the obvious disadvantage of delivering a very high dose to the mucous membranes with the subsequent permanent sequela of mucosal damage (mucosal atrophy, crust formation and the risk of bone necrosis) but it does not reach the extension of the disease into the immediately surrounding structures. With the use of higher voltages, such complementary procedure has become unnecessary because bone absorption is about equivalent to the absorption of soft tissues, and adequate external irradiation is therefore easily accomplished.

Department of Radiology, University of California Medical Center, San Francisco 22 (Vaeth).

REFERENCES

1. Deatsch, W. W.: Carcinoma of the nasopharynx—Treatment with radioactive cobalt, Calif. Med., 85:180, Sept. 1956.
2. Morrison, L. F.: Radiocobalt in otolaryngology, A.M.A. Arch. Otolaryng., 53:153, Feb. 1951.
3. Sooy, F. A.: Experimental treatment of recurrent carcinoma of the nasopharynx with electrodesiccation, radioactive cobalt and x-ray radiation, Ann. Otol., Rhin. & Laryng., 65:723, Sept. 1956.
4. Vaeth, J. M.: Nasopharyngeal malignant tumors—82 consecutive patients treated in a period of 22 years, Radiology, 74:364-372, March 1960.

Intestinal Atresia or Stenosis in the Newborn

Associated With Fibrocystic Disease of the Pancreas

GEORGE N. DONNELL, M.D., and ROBERT S. CLELAND, M.D., Los Angeles

• In a review of cases of intestinal atresia or stenosis in the newborn at Children's Hospital of Los Angeles it was noted that in approximately 10 per cent there was clinical or anatomic evidence of fibrocystic disease of the pancreas. Histologic sections of the bowel in all these cases showed the alterations of the mucosa commonly found in fibrocystic disease. Extensive ulceration, foreign body reaction and calcium deposition in the bowel wall were observed in five cases. Sections through the site of obstruction in one patient showed narrowing of the diameter of the bowel with preservation of muscular layers, but replacement of the central portion by a vascular, fibrous diaphragm in which giant cells, hemosiderin and calcium were prominent. This suggested that in certain instances obstruction of the intestine may be caused by fibrosis secondary to injury of the mucosa by abnormal meconium.

Awareness of the common association of intestinal obstruction and fibrocystic disease of the pancreas and recognition of the histologic change in the bowel in fibrocystic disease may lead to early diagnosis of this disorder in some infants with intestinal obstruction.

The ASSOCIATION of intestinal obstruction with fibrocystic disease of the pancreas has been the subject of several reports during the past two decades.* Landsteiner's[6] original report of meconium ileus in 1905 has been followed by reviews of this subject with increasing frequency. Although impaction of meconium is the usual cause of intestinal obstruction in fibrocystic disease of the pancreas, other factors may be responsible, such as volvulus, peritoneal bands, atresia and stenosis of the intestine.[9] The incidence of atresia of the intestine observed at operation and necropsy is unexpectedly high with fibrocystic disease.

Our interest in this problem was aroused when two neonates were successfully treated surgically for atresia of the intestine and subsequently had clinical fibrocystic disease of the pancreas, later confirmed at necropsy. In an effort to determine the incidence of fibrocystic disease in association with intestinal obstruction, we reviewed the records of cases of stenosis and atresia of the bowel at the Children's Hospital of Los Angeles, omitting those with volvulus, peritoneal bands, meconium ileus or meconium peritonitis. Complete reports of postmortem examination were available in 41 of 103 cases. Seven of these revealed histopathologic changes in the pancreas consistent with fibrocystic disease. Two additional patients were included whose pancreas was not available for study but whose histories and clinical course leave the diagnosis of fibrocystic disease of the pancreas in little doubt.

The purpose of this paper is to present these cases, adding support to the premise that the associated atresia or stenosis may be a part of fibrocystic disease itself, and to suggest that histologic study of surgical specimens may lead to early recognition of fibrocystic disease of the pancreas in these patients.

REPORTS OF CASES

CASE 1. A one-day old Caucasian girl was admitted to the Children's Hospital with vomiting, abdominal distention and absence of stools since birth. She was the third child of apparently healthy parents. One sibling, age 15 months, was alive and well. Another died at this hospital of fibrocystic disease at ten months of age. Pregnancy and delivery were uncomplicated and no abnormalities were noted at birth.

Respirations were rapid and shallow and the abdomen was greatly distended and tympanitic. Peristaltic sounds were audible. The clinical diagnosis of meconium ileus was strengthened by the radiographic observation of dilated loops of small intestine and little air in the bowel distal to the distended segments. At laparotomy dilated loops of upper jejunum were found which adhered to adjacent loops of bowel and parietal peritoneum. One loop of jejunum had perforated and appeared extensively necrotic just proximal to an area of narrowing which was thought to represent stenosis or atresia. Distally the intestine was unusually small and wormlike. A double-barrel jejunostomy was constructed and exteriorized. Postoperatively the infant did poorly and died the following day. Autopsy was not done.

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From the Children's Hospital of Los Angeles, and the Departments of Pediatrics and Pathology, University of Southern California School of Medicine, Los Angeles 33.

*References 3, 4, 5, 7, 8, 9, 10.

Case 2. A two-day-old Caucasian girl was admitted to the Children's Hospital because of vomiting of bile, abdominal distention and the absence of bowel movement since birth. She was the third child of healthy young parents. Two siblings were living and well. The pregnancy was complicated in the last two weeks by periorbital and ankle edema but delivery was uneventful.

On physical examination the distended abdomen felt lumpy to palpation, and peristaltic sounds were faint. Because intestinal obstruction was suspected the abdomen was opened. A large loop of upper ileum contained extremely rubbery greenish material. Distally, the intestinal diameter suddenly decreased. The remaining bowel appeared underdeveloped. The obstructed loop was resected and end-to-end anastomosis was carried out.

Persisting obstruction required surgical intervention on the fifth postoperative day. As the site of the previous anastomosis was the point of obstruction, the area was by-passed by a side-to-side anastomosis. The infant improved slowly thereafter and was discharged from the hospital at the age of 23 days. During the stay in hospital the stools and duodenal juice revealed no tryptic activity. About one month following discharge from the hospital a cough and mild expiratory wheeze were noted and they became progressively more severe. Despite dietary measures and the use of wide spectrum antibiotics, the condition of the patient deteriorated gradually and she died at the age of two months. Necropsy was performed.

Case 3. A 36-hour old Caucasian boy was admitted to the Children's Hospital because of vomiting, increasing abdominal distention and the absence of bowel movements for 24 hours. No family history was available.

The infant was in moderate distress. Respirations were rapid and irregular. The abdomen was grossly distended and tympanitic and veins over the upper abdomen were prominent. X-ray films confirmed a clinical impression of intestinal obstruction and at laparotomy the proximal one-fifth of the small intestine was greatly expanded and it ended in a blind pouch. The distal four-fifths of the intestine was underdeveloped and filled with thick meconium. The distal jejunum was excised to a point at which the development appeared normal, and a side-to-side anastomosis was constructed.

The postoperative course was marked by vomiting and continued distention, necessitating surgical intervention on the seventh postoperative day. The obstruction was caused by an angulation at the site of earlier anastomosis. The anastomosis was entirely resected and a new one was made side-to-side. The patient improved gradually until the 27th day, when a moderate cough developed and became progressively worse despite antibiotic therapy. Fibrocystic disease of the pancreas was suspected, but attempts at duodenal drainage were unsuccessful. Three consecutive stool specimens showed no tryptic activity by the x-ray film technique. The condition of the patient deteriorated and he died at 44 days of age. Necropsy was performed.

Case 4. The patient, a three and a half day old Caucasian girl, had been born with a distended abdomen and had begun vomiting bile soon after birth. She had passed no meconium. Vomiting and distention became progressively worse and the infant was admitted to the Children's Hospital. Pregnancy and delivery had been normal. The parents were young and healthy. Two half siblings were living and well, and one full sister of the patient had clinical fibrocystic disease of the pancreas.

The patient was severely dehydrated, cyanotic and critically ill. The abdomen was grossly distended. Veins over the surface of the abdomen were prominent and loops of bowel were palpable. Peristaltic sounds were not heard. The clinical diagnosis was meconium ileus and x-ray films were consistent with high intestinal obstruction. At operation the wall of a dilated loop of necrotic intestine was seen when the abdomen was opened. A perforation was demonstrated within this section of small bowel, which had a blind pouch just distal to it. Beyond this, the intestine was underdeveloped. The necrotic section of bowel was resected and continuity restored by side-to-side anastomosis. Postoperatively, the patient improved gradually and she was discharged from the hospital at the age of 45 days. Before discharge, stools tested for trypsin by the x-ray film technique revealed no evidence of this enzyme. Subsequently—the patient then being observed elsewhere—clinical symptoms of fibrocystic disease of the pancreas developed and she died. Necropsy was not done.

Case 5. A one-day-old Caucasian girl was delivered three weeks prematurely. Birth was difficult and forceps had to be used because of a greatly distended abdomen. Following delivery, 365 cc. of a material the color and consistency of pea soup was aspirated from the abdomen. Vomiting of bile-stained material occurred soon thereafter. The family history was noncontributory (but four years later a sibling was admitted to this hospital with severe pulmonary manifestations of fibrocystic disease, confirmed at necropsy).

The patient appeared severely ill and the abdomen was decidedly distended and tympanitic. The area immediately above the umbilicus was discolored. X-ray films of the abdomen showed several loops of distended small bowel. At operation a cystic mass filling the right gutter and extending across the midline was observed. It appeared to be attached to the undersurface of the umbilicus. The mass contained caseous material the consistency of pea soup. The terminal ileum and entire colon were described as atretic. No description of the caliber of intestine entering this mass was given. The infant died the day following operation. Necropsy was performed.

Case 6. An 18-hour-old Caucasian girl was put in hospital because of vomiting, distention and absence of meconium stool. Pregnancy and delivery had been uncomplicated, and the family history was noncontributory. The patient did not appear acutely ill but the abdomen was symmetrically distended, and visible intestinal patterns were prominent. X-ray films of the abdomen showed dilated loops of bowel with fluid levels. At operation the proximal two feet of jejunum were extremely dilated and hyperemic. Distally the lumen ceased and there was an atretic area for a distance of about 5 cm. beyond which the entire small and large intestine was collapsed and contained numerous areas of apparent stenosis. The blind ends of the atretic segments were exteriorized. Considerable vomiting and abdominal distention persisted after operation and the patient died seven days later. Necropsy was performed.

Case 7. An 18-hour-old Caucasian girl was born with a distended abdomen after an uneventful pregnancy and delivery. There was no vomiting but the abdomen became progressively more distended and there was no passage of meconium. The patient was admitted to Children's Hospital. Family history was noncontributory. X-ray films of the abdomen were consistent with obstruction of the small bowel. At operation a large sac of fecal matter was observed and there was a well demarcated but widespread reactive membrane plastered against the viscera. A dilated loop of small bowel entered this mass and a small loop left it. The ileum was packed with firm inspissated material. When the small bowel was freed around the fecal mass, a definite volvulus was noted. The two ends of bowel were exteriorized. The infant did poorly after operation and died 17 days later. Necropsy was performed.

Case 8. A 34-hour-old Caucasian girl was transferred to Children's Hospital because of progressive abdominal distention and bile-stained emesis. She was the third child of healthy parents. Two other siblings were living, one well and the other with a congenital malformation of the heart. The abdomen was grossly distended and tympanitic. Peristalsis was hyperactive. X-ray films of the abdomen were consistent with obstruction of the small bowel. At laparotomy the distal eight inches of the ileum was observed to contain thick tenacious meconium. Proximally the ileum was greatly dilated for about 18 inches and at the end of the enlarged section there was an area of atresia or pronounced stenosis. Proximal to this area there was localized perforation and peritonitis. The colon was very small throughout its length. The area of atresia or stenosis was resected and end-to-end anastomosis was carried out.

Postoperatively, pronounced abdominal distention continued. X-ray films showed pneumoperitoneum and a second abdominal exploration was necessary to reconstruct the leaking anastomosis. The child did poorly thereafter and died one day after the second operation. Necropsy was performed.

Case 9. A Caucasian boy was admitted to hospital at the age of six hours because of abdominal distention. Pregnancy had been complicated by hydramnios.

The patient appeared to be critically ill. Veins about the umbilicus were dilated, the abdomen was distended and there were no sounds of peristalsis. X-ray films showed the stomach, duodenum and upper jejunum to be distended. The clinical diagnosis was intestinal obstruction with perforation and peritonitis.

At operation the jejunum was atretic and its proximal and distal portions were completely separated. The upper segment ended in a massive perforation and the abdominal cavity was filled with amniotic fluid and meconium. The areas of atresia and perforation were resected and a side-to-side anastomosis constructed. The child did poorly and died three days after operation. Necropsy was performed.

These patients were predominantly Caucasian and female (Table 1) as are most patients with fibrocystic disease.[1] Shortly after birth, all had such symptoms of intestinal obstruction as vomiting, abdominal distention and failure to pass meconium. Complete or partial occlusion of the jejunum or ileum was observed at operation, with complete separation of proximal and distal segments of the intestine in three cases. Intestinal perforation and peritonitis had occurred in six. Operative procedures included jejunostomy, end-to-end anastomosis and side-to-side anastomosis. Three patients had to have a second operation. Two of the nine were cured of intestinal obstruction and returned home, but both died later of fibrocystic disease. The remaining seven died in the hospital a few hours to six weeks after operation.

PATHOLOGY

Fibrocystic disease of the pancreas was proven by necropsy in seven cases. The family history and clinical course of the two patients not examined postmortem are considered sufficient to establish the diagnosis beyond reasonable doubt. In one patient stenosis of the extrahepatic biliary tree was observed at autopsy. No other congenital malformations were noted.

TABLE 1.—*Summary of Clinical Data in Nine Cases of Intestinal Obstruction in Newborn Associated with Fibrocystic Diseases of the Pancreas*

Case No.	Sex	Age at Onset of Symptoms	Site of Obstruction	Type of Obstruction	Perforation	Operative Procedure	Age at Death	Diagnosis of Fibrocystic Disease	Comment
1.	F	Birth	Jejunum	Atresia	+	Jejunostomy	2 days	Clinical	
2.	F	Birth	Ileum	Stenosis	—	(1) End-to-end anastomosis (2) Side-to-side anastomosis	2 mos.	Necropsy	Required second operation
3.	M	12 hr.	Jejunum	Complete atresia with separation of segments	—	(1) Side-to-side anastomosis (2) Side-to-side anastomosis	44 days	Necropsy	Required second operation
4.	F	Birth	Ileum or jejunum	Complete atresia with separation of segments	+	Side-to-side anastomosis	10 mos.	Clinical	
5.	F	In utero	Ileum	Atresia	+	Exploratory only	2 days	Necropsy	
6.	F	Birth	Jejunum	Atresia	—	Jejunostomy	8 days	Necropsy	
7.	F	In utero	Jejunum	Stenosis and volvulus	+	Jejunostomy	18 days	Necropsy	
8.	F	Birth	Ileum	Stenosis or atresia	+	(1) End-to-end anastomosis (2) Reconstruction of anastomosis	9 days	Necropsy	Required second operation
9.	M	Birth	Jejunum	Complete atresia with separation of segments	+	Side-to-side anastomosis	3 days	Necropsy	Pregnancy complicated by hydramnios

Histologic specimens of intestine removed at operation or at necropsy were available in all cases, and two kinds of pathologic changes were noted. The mucosal changes commonly observed in fibrocystic disease[2] were present in all patients. These are illustrated in Figures 1 and 2 and include (1) increase in the number and activity of goblet cells in the small intestinal glands, (2) dilatation of glands with occasional formation of cysts, and (3) masses of pink inspissated material within the glands. Occasionally these alterations, especially the third, may be observed in patients without fibrocystic disease of the pancreas, but rarely to the same degree. They appear to be related to the general disorder of glandular function associated with fibrocystic disease of the pancreas. When such changes are observed in surgical or postmortem specimens, suspicion of this disorder should be aroused.

Extensive ulceration of the mucosa and deposition of calcium were observed in five specimens (Cases 1, 3, 4, 7 and 9; Figures 3 and 4). In some specimens the surface of the bowel was replaced by coagulative necrosis, with masses of calcium scattered through pink, granular debris. In others, a dense layer of calcium replaced mucosa and extended deep into the underlying tissues. Cellular reaction was chronic in nature, largely phagocytic and including giant cells. One of the most striking alterations was the extensive deposition of calcium in the

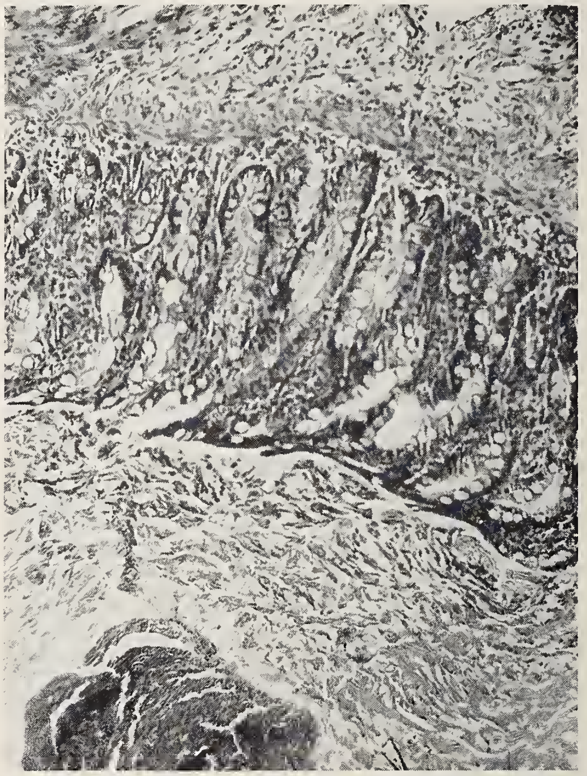


Figure 1.—Mucosal changes in fibrocystic disease of the pancreas: Increase of goblet cells, dilatation of glands, masses of inspissated material in glands (× ±300).

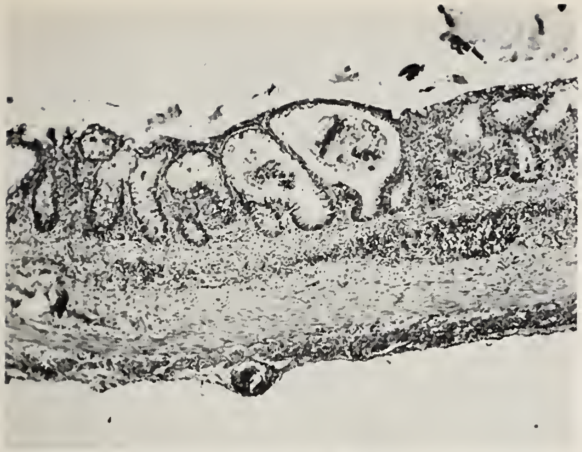


Figure 2.—Mucosal changes in fibrocystic disease of the pancreas—cyst formation (× ±100).

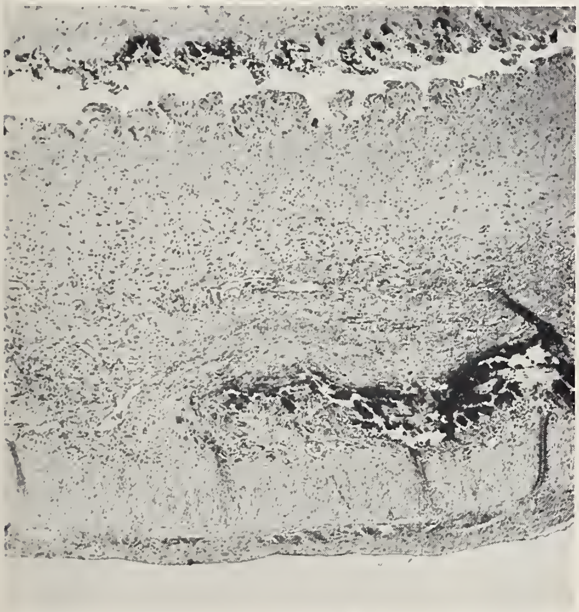


Figure 3.—Ulceration and calcification of bowel wall in case of atresia in patient with fibrocystic disease (× ±180).

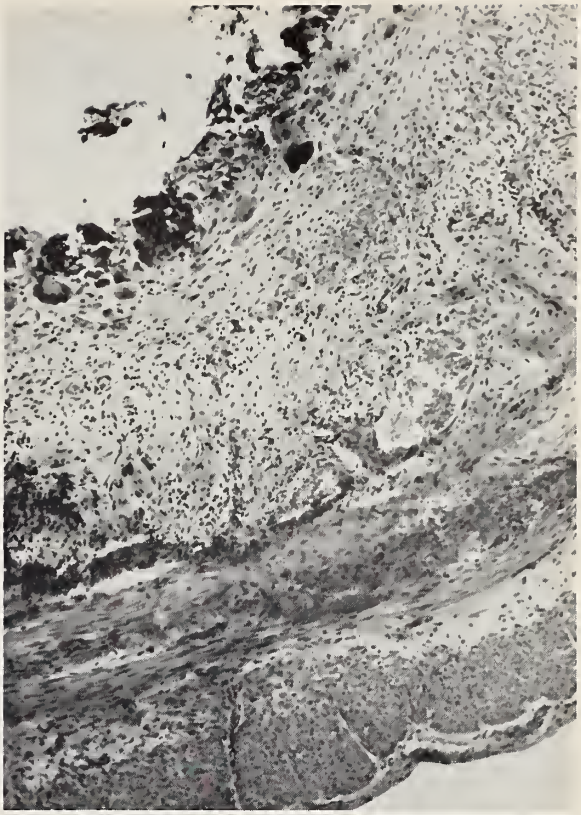


Figure 4.—Calcification and foreign body reaction in case of atresia with fibrocystic disease (× ±300).

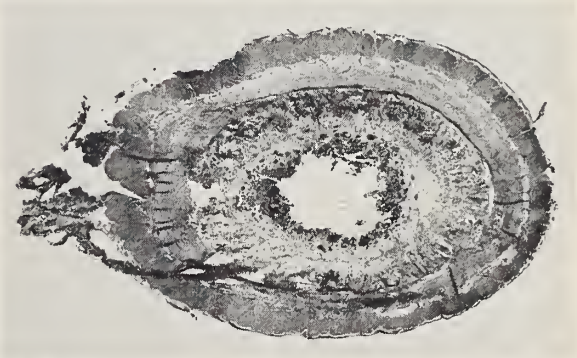


Figure 5.—Case 1, showing narrowing of diameter of bowel, central diaphragm and calcium deposition (× ±15).

muscle layers. In some specimens an entire layer of muscle was replaced by calcium for the width of several low-power microscopic fields. Small foci of foreign body reaction and calcification were also present in the subserosa. Occasionally keratinized epithelial cells were visible in such lesions.

The changes noted in Case 1 deserve particular attention (Figure 5). Specimens taken adjacent to and remote from the site of obstruction showed the pathologic features described above. Sections from the site of obstruction itself, however, showed narrowing of the diameter of the bowel with muscle layers intact and the central portion consisting of a fibrous diaphragm of young, vascular connective tissue containing numerous giant cells, lymphocytes and phagocytes filled with hemosiderin. No epithelium was evident, and there was a large mass of calcium where a lumen might have been expected. The histologic nature of the lesion suggested reparative fibrosis.

DISCUSSION

Zuelzer[10] and LeLong[7] described cases similar to Case 1 in the present report, which gives rise to a postulation that the obstruction was secondary to fibrocystic disease rather than a primary arrest of development. In meconium ileus, the meconium is extremely viscid and tightly adherent to the intestinal wall. It is probable that the same is true of all cases of fibrocystic disease in lesser degree. It seems possible, therefore, that in certain cases peristalsis may act upon such abnormal meconium with sufficient vigor to cause ulceration of the intestinal mucosa, permitting penetration of meconium into the submucosal layers. The result might be a foreign body reaction, scarring and, eventually, complete occlusion. Certainly Case 1 in this report and the cases cited suggest this as an attractive explanation of obstruction in patients with fibrocystic disease. However, partial or complete occlusion of the intestine is equally possible on a developmental basis, abnormal meconium in the segment proximal to the obstruction producing the alterations observed in the bowel wall of the patients in the present series. The correct interpretation will depend on further study.

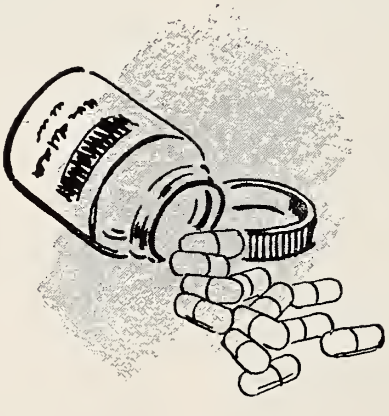
The high incidence of fibrocystic disease in cases of atresia or stenosis of the ileum and jejunum in the newborn is much more important. Levy,[8] in 1951, found nine reported instances of this association in a review of intestinal obstruction in fibrocystic disease. The cases in the present report constitute approximately 10 per cent of all cases of atresia or stenosis of the small intestine in this hospital. Pediatricians and surgeons should be alert to the possibility of fibrocystic disease whenever neonatal intestinal obstruction is suspected. As surgical techniques improve and more infants with intestinal obstruction survive the operation, the possibility of an ultimately unfavorable prognosis due to fibrocystic disease should be recognized. Further, if fibrocystic disease is recognized early, it is possible that the course of that disorder might be favorably influenced.

As pediatricians and surgeons recognize the common association between intestinal obstruction of the newborn and fibrocystic disease of the pancreas, and as pathologists recognize the suggestive histologic alterations in specimens of bowel wall, suspicion of the disease should be aroused early. Confirmatory tests such as analysis of sweat and duodenal secretions should then lead to confirmation or exclusion of the diagnosis, and early institution of therapeutic measures.

4614 Sunset Boulevard, Los Angeles 27 (Cleland).

REFERENCES

1. Andersen, D. H.: Cystic fibrosis of the pancreas and its relation to celiac disease, Am. J. Dis. Child., 56:344, 1938.
2. Bodian, M.: Fibrocystic Disease of the Pancreas, Greene & Stratton, New York, 1953.
3. Hiatt, R. B., and Wilson, P. D.: Celiac syndrome VII. Therapy of meconium ileus; report of eight cases with review of the literature, SG&O, 87:317, 1948.
4. Hurwitt, E. S., and Arnheim, E. E.: Meconium ileus with stenosis of the pancreatic ducts; a clinicopathologic and embryologic study, Am. J. Dis. Child., 66:55, 1943.
5. Kaufmann, W., and Chamberlin, D.: Congenital atresia of pancreatic duct system as a cause of meconium ileus. Critical review of the literature with report of one case, Am. J. Dis. Child., 66:55, 1943.
6. Landsteiner, K.: Darmverschluss durch eingedichtes Meconium, Zentralbl. f. allg. Path. u. path. Anat., 16:903, 1905.
7. LeLong, M., Petit, P., LeTan Vinh, and Borniche: Fibrose kystique du pancreas ileus meconial et atresie du grele, Arch. franc. Pediat., 7:225, 1950.
8. Levy, E.: A case of fibrocystic disease of the pancreas with intestinal obstruction, Arch. Dis. in Childhood, 26:335, 1951.
9. Rogers, J. D., Baggenstoss, A. H., Musgrove, J. E., and Kennedy, R. L. J.: Intestinal obstruction associated with fibrocystic disease of the pancreas, Minnesota Med., 34:1075.
10. Zuelzer, W. W., and Newton, W. A.: The pathogenesis of fibrocystic disease of the pancreas, Pediatrics, 4:53, 1949.



Neurologically Handicapped Children

The Role of the Pediatrician in Rehabilitation

GORDON F. WILLIAMS, M.D., Palo Alto

• In the application of the broad services now available to assist a child having a major neurologic impairment, the pediatrician occupies an important role owing to his ability to consider the problem of the handicapped child in the context of his specialized knowledge of the developmental process. He thus has a large responsibility for interpretation of the problem to the child, to the parents and to his professional colleagues and for guidance of the rehabilitation regimen within the limits of the child's developmental readiness for new experiences.

The pediatrician has the opportunity to contribute significant clinical observations which may provide stimuli for future basic research and to exercise his skill as a practitioner of preventive medicine.

Goals for the future achievement of the child having a major neurologic impairment must be set realistically and with great caution.

In the past decade much has been learned about the techniques of rehabilitation. The philosophy of rehabilitation, embodying as it does attention not only to the physical but also to the emotional, the social and the educational aspects of the crippling disorders of childhood, has been epitomized in several excellent reviews which have appeared in the pediatric literature within the past decade.[5,10,12,24] Much emphasis has been given to the "multidisciplined approach"[27] on the basis that the assault on the multiple problems of the severely disabled child —for example, the child having a neurologic handicap—requires a battery of skills too diverse to be encompassed by any individual physician.

In recent years numerous elaborate rehabilitation centers have come into being, staffed by large numbers of medical specialists with coworkers from such other professions as psychology, social work, speech pathology and audiology, physical therapy and occupational therapy. These are generally located in the more densely populated urban areas. In addition, educators have given much attention to the problems of the handicapped child, particularly to those of the child having a neurologic impairment, with the result that in many areas such children are segregated in special schools for the disabled throughout their scholastic experience.

In the consideration of problems of the child having a neurologic impairment, much emphasis has been given to methods of evaluation and management. Techniques for early case-finding,[26] for classification of the neurologic deficit,[2] for detection of associated damage to the visual and acoustic apparatus,[7,22] for assessment of disability in the areas of language and communication[1,13] and for the psychologic appraisal of the brain-damaged child[14,18] are given extended discussion. In the fields of physical therapy[6] and of occupational therapy,[17] those concerned with the practical aspects of assisting the child toward the development of specific neuromuscular skills have evolved elaborate regimens which can be employed only by those having a highly specialized background of training. Educators have published extensively, often in conjunction with psychologists, on the particular learning disabilities encountered in children having impairments of the central nervous system and on the special techniques of education that have proved most rewarding in this field.[9,23]

Methods for parent counseling, and in particular group therapy techniques,[16,19] have been tested with parents of children having a variety of handicaps and have proved fruitful in assisting parents toward the development of insight into the dynamics of their relationships with their handicapped and frequently emotionally disturbed children. In addition, the sociologists and the cultural anthropologists[24] have asked that due consideration be given to community and cultural factors as they relate to the individual undergoing what now appears to be the almost overwhelming experience of becoming rehabilitated.

In view of the special knowledge required, it would be small wonder if the pediatrician, looking upon himself now as a generalist, should feel abashed and even at times bewildered. When considering the complexities that have been devised for the study and care of patients handicapped by neurologic deficits, one can visualize the pediatrician asking himself in the dead of night, "Am I a sociologist, a social worker, a psychologist? Am I a neurologist, a physiatrist? Where do I fit in? What is

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From the Stanford Convalescent Home, and Department of Pediatrics, Stanford University School of Medicine, Palo Alto.

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my role?" He may well reflect that the "multidisciplined approach," although it has proved useful in bringing to light many specialized aspects of the complex problem of central nervous system impairment, has also built within it the potential for creating in his patients and their families an even larger degree of confusion than he had felt momentarily when he paused for self-scrutiny. The pediatrician must remind himself that only he, of all the professional people with whom his patient may have contact, can view the child's total situation with the perspective and wisdom that a specialized knowledge of the process of development permits. With his knowledge of the ramifications of the developmental process the pediatrician is in a position to evaluate the dynamic significance of one aspect or another of defective neurologic function. He is the only one in a position to interpret to the parent the significance of the neurologic impairment as it relates to aptitude of intellectual function, perceptual ability and learning capability and how these in turn relate to emotional maturity and to the image that the child has formed of himself. It is his large responsibility to interpret these matters to the parent in the light of his own knowledge of the complexities of the developmental process.

Although the pediatrician here finds himself in the role of a teacher to the parent, he has another more primary role, even more important. With his knowledge of the dynamic process of growth and development of the central nervous system, he is in the unique position of capability for assigning values to the various manifestations of neurologic dysfunction which may be manifested by reflex activity, by lack of cortical inhibition, by ataxia, dystonia or the like. His sophistication in matters pertaining to the developmental process permits him to relate laboratory and electroencephalographic findings to the physical and psychologic attributes of his patient as he views him in a given moment of time. This knowledge of the basic processes underlying the total development of the child and, more specifically, what is known of the biochemical development of the central nervous system, permits the pediatrician to recognize his patient's readiness or lack of readiness for new experiences and specifically for any new mode of therapy, training or scholastic instruction that may be planned. Thus, recognizing the importance of tailoring treatment regimens and scholastic programs in such a fashion that they will be the most appropriate for his patient's developmental level and for his emotional readiness for new experiences, the pediatrician will be in constant touch with the physical therapist, the speech therapist and the teacher, truly coordinating their activities in a fashion that will permit his patient to make the maximum gains from the specialized help that is offered him. Likewise, his knowledge of the intimate parent-child interaction will permit him an understanding of the forces pertaining in the home which will permit optimal developmental progress on the one hand, or, in a situation in which a disturbed relationship exists, an interference with the developmental process and consequent complications in the therapeutic or learning situation.

CAUSES OF NEUROLOGIC IMPAIRMENT

The major disabilities of the central nervous system seen in infancy and childhood may be divided into those having their origin in a genetic abnormality of the germ plasm or otherwise originating

TABLE 1.—*Classification of Causes of Neurologic Impairment in the Developing Organism*

Period of Onset	Underlying Disturbance	Examples
Prenatal	1. Genetic disorder	a. Gargoylism b. Lipoid storage diseases c. Galactosemia d. Phenylketonuria
	2. Congenital malformation	a. Myelodysplasia b. Craniostenosis
	3. Infection	a. Toxoplasmosis b. Maternal rubella
Perinatal	1. Infection	a. Sepsis
	2. Trauma, hypoxia or vascular injury	a. Spastic quadriplegia or hemiplegia
	3. Endogenous neurotoxic agent	a. Hyperbilirubinemia
Postnatal	1. Metabolic	a. Porphyria
	2. Nutritional	a. Convulsive state related to pyridoxin deficiency
	3. Infection	a. Viral encephalitis b. Suppurative meningitis
	4. Trauma, hypoxia or vascular injury	a. Hemiplegia, quadriplegia
	5. Neoplasm	a. Glioma, ependymoma
	6. Exogenous toxic substances	a. Lead encephalopathy b. Drug toxicities

in prenatal life, those which originate during the perinatal period and those having their beginnings at some point in the postnatal period. These may, in turn, be divided into those expressing themselves in a metabolic dysfunction (of which a majority have an essentially genetic basis): those manifesting themselves by congenital malformation (of which some have a clearly genetic basis and some appear to be related to environmental insult during intrauterine life); those related clearly to infection; those related to trauma or vascular damage: those related to specific nutritional lack: those related to endocrine abnormality; those due to neoplasms of the brain: those due to endogenous neurotoxic substances; and those in which central nervous system dysfunction is due to the action of an exogenous poison. There is considerable overlap in these categories. Table 1 provides a far from complete listing of examples of these several categories of disorders of the central nervous system.

The pediatrician has the opportunity to play the most significant role in the detection of brain injury. Through his close relationship with child and family he is apt to be the first to become aware of a deviation from the smooth course of normal development, and so to arrive at a diagnosis of impairment in neurologic function. Beyond this, the pediatrician has an even more exciting opportunity. With him lies the potential, through his critical clinical observations, for uncovering previously unrecognized basic processes which may lead to central nervous system dysfunction. An example will suffice: In 1954 Hunt and his collaborators[11] observed a young infant having intractable convulsive seizures. Through an elegant plan of clinical study they were able to define that this baby's convulsive difficulty was based on what they characterized as "pyridoxine dependence." The administration of pyridoxine controlled the seizures. Later others,[3] observing convulsive phenomena in infants, fed a proprietary milk mixture which lacked pyridoxine, confirmed Hunt's earlier observation and were able to define the requirement of the infant for this essential nutrient substance. In the meantime the biochemists,[21-25] studying the metabolic effects on the brain of pyridoxine deprivation, were able to define that the occurrence of epileptiform seizures in the experimental animal so deprived is correlated with a specific decrease of glutamic decarboxylase activity (for which pyridoxine serves as a coenzyme) with consequent failure in the formation of γ-aminobutyric acid, an amino acid found only in the tissue of the central nervous system. Further basic research has disclosed that in all cases of epileptiform seizures studied, both in the experimental animal and in brain excised from human beings having focal epilepsy, there is evidence for involvement of glutamic acid itself or of γ-aminobutyric acid.

A further opportunity of the pediatrician has to do with his role in early case-finding. Here, through the accurate identification of a metabolic disorder in the young infant, at a stage prior to the development of major significant brain damage, he may be able to control the metabolic dysfunction through dietary or other means and so permit the child unimpaired brain development which would otherwise have been denied. The employment of a lactose-free diet in galactosemia[15] and of a dietary low in phenylalanine in phenylketonuric patients[4] are examples familiar to everyone. These examples point up the growing importance of improvement of our understanding of genetic disturbances.[20] A tool which would permit the identification of the heterozygote in either of the situations cited here, or in many of the other traits transmitted by an autosomal recessive gene, would be invaluable in permitting the early identification of the homozygous individual and the application of appropriate measures for management where these are feasible.

GOALS IN THE REHABILITATION

In planning a program for a child having a major neurologic deficit, multiple areas must be considered, as has been pointed out earlier. These include the management of the physical aspects of the disability with appropriate consideration being given to the child's intellectual capacity, to his level of emotional maturity and perhaps particularly to the image he has of himself, as well as to the fashion in which he relates to his peers and to adults. His educability, and particularly the fashion in which he perceives spatial relationships, as well as his manner of performance in certain disciplined activities such as reading, writing and the use of numbers, requires careful consideration. Lastly, detailed knowledge of his family and of his home situation are essential. The impact upon the parents and indeed upon the entire family, as it can be defined in terms of economic stress, of guilt and of anxiety, of the ambivalence that the parents may feel toward the handicapped child in terms of overprotection on the one hand and rejection on the other, is a matter which cannot be underestimated. Here the collaborative services of a skilled social worker are invaluable to the busy physician. Not only can the social worker be useful in interpreting to the family the interplay of feelings which predictably occur in this sort of situation, but her knowledge of community resources available to the physician, which will assist him in meeting the needs of the family, can be most helpful.

TABLE 2.—*Intellectual Competence of Brain-Damaged Patients*[8]

Intellectual Competence Category	Pyramidal Involvement Only No.	Pyramidal Involvement Only Per Cent	Extra-pyramidal Involvement Only No.	Extra-pyramidal Involvement Only Per Cent
Superior	12	4	11	12
Average	53	19	31	33
Borderline	71	26	20	22
Defective	62	23	19	20
Low-grade defective	75	28	12	13
Total	273	100	93	100

Perhaps the most serious pitfall that is met in the process of rehabilitation is that of setting unrealistic goals. This is well illustrated in Table 2, which is an adaptation of Bronson Crothers'[8] data on a large group of brain-damaged children who were observed carefully, with repeated determinations of intellectual functioning, psychologic aptitude and performance over an extended period.

The data speak for themselves. They are, to say the least, depressing. It seems obvious that, in this group of children where almost half are patently mentally defective, the goals to be anticipated in terms of future achievement must be set with great caution. The parents must be carefully and gradually prepared to view the future with realism. The rate of salvage, placed in terms of the likelihood of future independence and important contribution to society, will be low. A similarly cautious prognosis must be given with regard to the child who has developed manifestations of severe personality disturbance with relation to his disability.

520 Willow Road, Palo Alto.

REFERENCES

1. Aufricht, H.: A proposed system of classifying the language defects of children with cerebral palsy, Exceptional Children, 22:109, 125, 1955.

2. Balf, C. L.: Problems in the classification of cerebral palsy in childhood, Brit. Med. J., 4932:163, 1955.

3. Bessey, O. A., Adam, J. D., and Hansen, A. E.: Intake of vitamin B_6 and infantile convulsions. A first approximation of requirements of pyridoxine in infants, Pediatrics, 20:33, 1957.

4. Bickel, H., Boscott, R. J., and Gerrard, J.: Observations on the metabolic error in phenylketonuria and its dietary control. Biochemistry of the Developing Nervous System, Waelsch, H. Ed. Academic Press, Inc., New York, 1955.

5. Bluestone, S. S., and Deaver, G. G.: Rehabilitation of the handicapped child, Pediatrics, 15:631, 1955.

6. Bobath, K., and Bobath, B.: A treatment of cerebral palsy based on the analysis of the patient's motor behaviour, Brit. J. Phys. Med., 15:107, 1952.

7. Byers, R. K., Paine, R. S., and Crothers, B.: Extrapyramidal cerebral palsy with hearing loss following erythroblastosis, Pediatrics, 15:248, 1955.

8. Crothers, B., and Paine, R. S.: The Natural History of Cerebral Palsy, Harvard Univ. Press, Cambridge, Mass., 1959.

9. Cruickshank, W. M.: New horizons in education of the handicapped child, Am. J. Pub. Health, 45:306, 1955.

10. Denhof, E., and Jones, M. H. J.: Rehabilitation of neuromuscular disturbances, Pediatrics, 20:165, 1957.

11. Hunt, A. D., Jr., Stokes, J., Jr., McCrory, W. W., and Stroud, H. H.: Pyridoxine dependency. Report of a case of intractable convulsions in an infant, controlled by pyridoxine, Pediatrics, 13:140, 1954.

12. Kanof, A.: Pediatric rehabilitation and the pediatrician, J. Ped., 47:461, 1955.

13. Kastein, S.: Language development in a group of children with spastic hemiplegia, J. Ped., 39:476, 1951.

14. Kogan, K. L.: Repeated psychometric evaluations of preschool children with cerebral palsy, Pediatrics, 19:619, 1957.

15. Komrower, G. M., Schwartz, V., Holzel, A., and Goldberg, L.: A clinical and biochemical study of galactosemia, Arch. Dis. Childhood, 31:254, 1956.

16. Korsch, B., Fraad, L., and Barnett, H. L.: Pediatric discussions with parent groups, J. Ped., 44:703, 1954.

17. Lawton, E. B.: A.D.L.—Activities of daily living. Testing, training and equipment, Rehabilitation Monograph X, Institute of Physical Medicine and Rehabilitation, New York, 1956.

18. Meyer, E., and Simmel, M.: The psychological appraisal of children with neurological defects, J. Abnormal and Social Psychol., 42:193, 1947.

19. Millman, D. H.: Group therapy with parents. An approach to the rehabilitation of physically handicapped children, J. Ped., 41:113, 1952.

20. Penrose, L. S.: Biochemical genetics as an approach to mental disease and defect. Biochemistry of the Developing Nervous System, Waelsch, H., Ed. Academic Press, Inc., New York, 1955.

21. Roberts, E., and Baxter, C. F.: γ-aminobutyric acid in brain. Biochemistry of the Central Nervous System, Proc. 4th Internat. Congress Biochem., Vienna, 3:268, 1958.

22. Schachat, W. S., Wallace, H. M., Palmer, M., and Slater, B.: Ophthalmologic findings in children with cerebral palsy, Pediatrics, 19:623, 1957.

23. Schonell, F. E.: Educating Spastic Children, Philosophical Library, New York, 1956.

24. Seidenfeld, M. A.: The evaluation of rehabilitation in the individual, Am. J. Orthopsychiat., 27:9, 1957.

25. Tower, D. B.: Glutamic acid metabolism in the mammalian central nervous system. Biochemistry of the Central Nervous System. Proc. 4th Internat. Congress Biochem., Vienna, 3:213, 1958.

26. Wallace, H. M., Landing, M., Rich, H., and Gold, E. M.: Case-finding of handicapped children, with special reference to cerebral palsy, A.M.A.J. Dis. Child., 88:298, 1954.

27. Wallace, H. M., Tobis, J. S., Siffert, R. S., Losty, M. A., and Elledge, C. H.: The role of rehabilitation in a program for handicapped children, J.A.M.A., 162:26, 1956.

Malignant Degeneration in Burn Scars

SALVADOR CASTAÑARES, *M.S., M.D.*, Los Angeles

• The malignant potential of burn scars has been recognized since Marjolin's classical description of cancer arising in several types of post-traumatic scars.

With improved burn therapy since the last war, there has been a higher survival rate of severe burns with proportionate increase in cancer associated with burn scars. This will create increasing problems of permanent disability and compensation.

The younger the patient at the time of the burn, the longer the time required for the cancer to develop. Acute cancer development in burn scars has been reported after a four-week interval. Cancer may develop from six weeks to fifty years or more.

The etiology of cancer in burn scars is not known. The most important clinical finding is the fact that most of the burn cancers occur in areas which were not grafted.

The most common type of cancer encountered in burn scars is squamous cell carcinoma, which forms in Marjolin ulcers. Basal cell carcinoma may develop in the most superficial of burn scars.

Treatment should be directed primarily to prompt and adequate skin grafting in all deep burns in order to prevent malignant degeneration of the burn scars. Once it has developed the treatment is the same as for other malignancies which are not associated with burns. Wide surgical excision with block dissection of the regional lymph nodes when they are involved is the treatment of choice. The prognosis of burn scar cancer is poor, once the process has extended because of early and distant metastasis.

THE PLASTIC SURGERY PROBLEMS that are related to industrial medicine are many, particularly with regard to injuries resulting in functional and cosmetic disabilities. One that stands out in increasing importance is the problem of malignant degeneration in burn scars.

The malignant potential of burn scars has been recognized before. In 1828 Jean-Nicholas Marjolin[11] wrote his classical description of cancer arising in post-traumatic scars of several types, but since, the term *Marjolin ulcer* has come to be used particularly to describe malignant changes occurring in burn scars.

Owing to improvements in burn therapy that derived from the experience of World War II the survival rate of persons with severe burns has risen. A concomitant has been an increase in the problem of cancer associated with burn scars, and a proproportionate increase also in the problems of permanent disability, compensation and litigation, particularly with regard to industrial accident cases. The liability of insurance carriers in cases of malignant change as a complication of a burn either soon or many years after the injury will have to be determined through legal decision. It is felt that our present legal ruling rests on an unsure foundation, due to lack of etiologic knowledge of cancer. This may change, however, as we gain more insight into the general and specific causes of cancer, and into the relationship of all types of trauma to malignant change.[2]

Malignant changes in burn scars may occur in any race and at any age, although they are seen predominantly in adults, particularly in males. Studies show that approximately 78 per cent of all Marjolin ulcers occur in males. Malignant lesions of this order occur predominantly in the extremities and on the head: 38 per cent occur in the lower extremities, 22 per cent in the upper extremities, 30 per cent on the head and 10 per cent on the trunk. Various investigators have reported between 9 per cent[1] and 24 per cent[3] of all types of cancers in the extremities originate from burn scars.

The younger the patient is at the time of the burn, the longer it takes for cancer to develop.[10] It may take 40 or 50 years after burns in childhood but from only a few months up to nine years for patients burned after age 50.

Horton and coworkers[7] reported various cases in which malignant change developed from six weeks to 36 years after the original burn.

McLeod[12] and Stauffer[14] reported malignant degeneration after four weeks in some cases. This is the shortest period reported. Roffo[13] reported a latent period of 60 years, which is the longest noted in the literature.

The cause of malignant change in burn scars is not known. There are several theories, as is the case regarding cancer in general. Virchow's theory of chronic irritation seems to be the most plausible, since most malignant tumors develop at the site of a large, chronic, draining irritated wound, or at a place of cicatricial contracture,[5] where there is con-

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From the University of Southern California School of Medicine, Los Angeles 33.

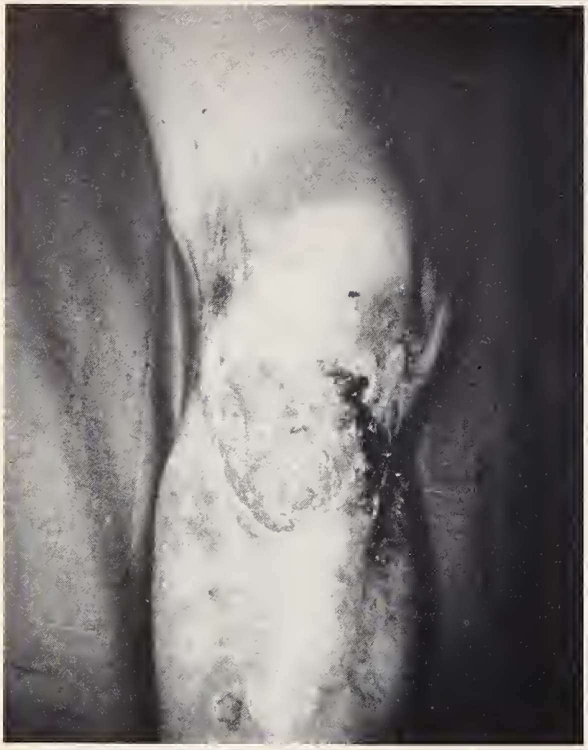

Figure 1.—Nineteen-year-old burn scar with frequent and persistent breakdowns, resulting in chronic, draining and irritated wound. Marjolin ulcer formation, and finally in squamous cell carcinoma degeneration. On examination it was found the malignant process had invaded muscles, tendons and bone. In spite of amputation the patient died of distant metastatic carcinoma.

tinuous stress and strain with frequent and persistent breakdowns.

Constant exposure of a burn scar to oils or certain chemicals has been considered a factor in industrial jobs. It is well known that certain oils and chemicals contain carcinogenic substances.[4]

The most important clinical finding, however, is that most of the cancers in burn scars occur in areas that have not been grafted. The greatest incidence is associated with deep burns that healed slowly, remaining ulcerated and irritated over long periods.

The most common type of cancer encountered in burn scars is squamous cell carcinoma, which forms in Marjolin ulcers, originating in thick scar tissue. These lesions may invade muscle, tendon or bone, although they extend slowly. The scar tissue may undergo alternating changes of healing and ulceration, may become thickened and resemble a keloid, or may remain superficial and loose.[9] Invariably in malignant lesions in burn scars, inflammation and infection develop, which may stimulate growth and metastasis.

In the most superficial burn scars, in which the hair follicles and sweat glands have not been destroyed, basal cell carcinomas may develop.

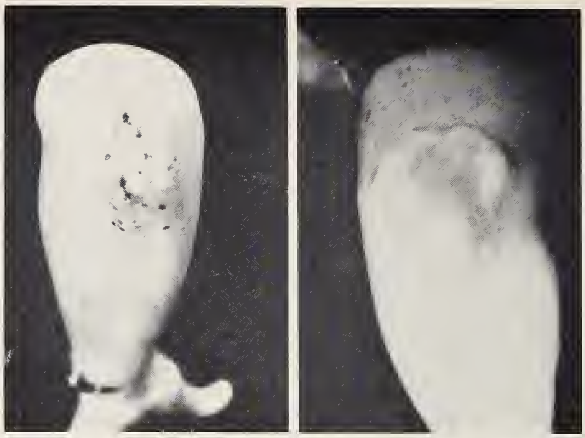

Figure 2.—*Left:* 23-year-old scar, with early malignant degeneration. *Right:* After wide surgical excision followed by thick split-thickness skin graft.

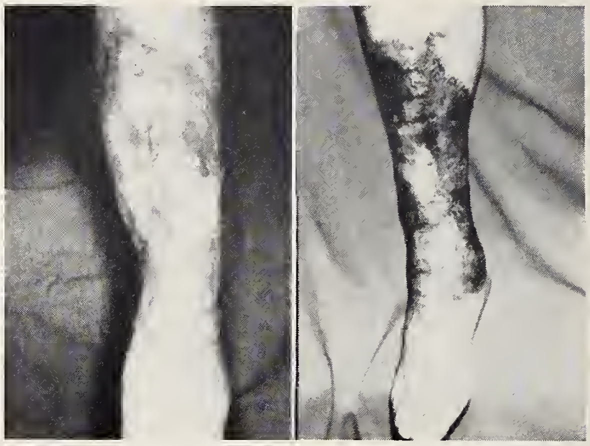

Figure 3.—*Left:* 17-year-old burn scar with frequent breakdowns, ulceration and infection. Biopsy revealed squamous cell carcinoma. *Right:* After extensive and deep excision of ulcerated areas, including adjacent intact burn scars followed by split-thickness skin graft. Note unpredictable hyperpigmentation changes of the healed skin graft.

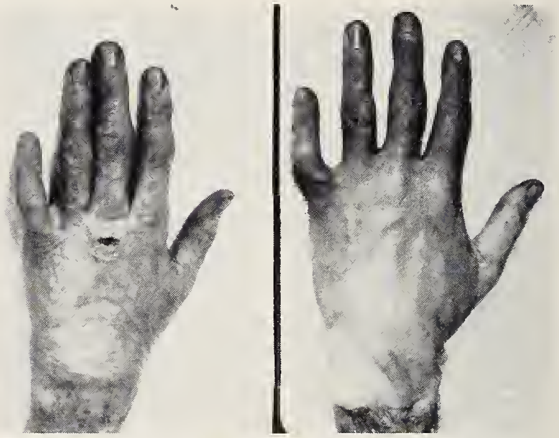

Figure 4.—*Left:* 5-year-old burn scar of hand with frequent breakdown, final ulceration and early malignant degeneration to basal cell carcinoma. *Right:* After resection of entire dry and thick scar from dorsum of hand and fingers and resurfacing with large split-thickness skin graft.

Fleming[6] reported the development of sarcoma in old burn scars, stating that there is malignant potential contained within the deeper tissues adjacent to a burn.

It is very difficult to prove or disprove that a premalignant tendency of the skin existed before the burn in the rare cases of acute burn scar cancer occurring within a year after a burn.[8]

TREATMENT

There is no better dressing for a third-degree burn than skin. Consequently, in order to prevent burn scar cancers, prompt and adequate skin grafting should be done in all cases of deep burns. After the initial healing, all secondary contractures with evidence of breakdowns and continuous stress and irritation should be treated either by skin grafting, flap rotation, Z-plasty procedures or a combination of the above.

The treatment of a malignant lesion in a burn scar is the same as for the same kind of lesions not associated with burns. Wide surgical excision is the treatment of choice, with block dissection of the regional lymph nodes if they are involved.[5]

X-ray and radium are less effective, for some of them are not amenable to radiation and usually there is already considerable fibrosis or scarring present.

Once the process has extended because of early and distant metastasis, the prognosis of burn scar cancer is poor.

1930 Wilshire Boulevard, Los Angeles 57.

REFERENCES

1. Arndt, G.: Beitr. Klin. Chir., 157:305, 1933.

2. Behans, R. J.: Relation of Trauma to New Growths; Medico-Legal Aspects, Bailliere, Trindall & Cox, London, 1939.

3. Broders, A. C.: Surg. Gynec. and Obst., 51:28, 1916.

4. Combes, F. C.: Coal Tar and Cutaneous Carcinogenesis in Industry, p. 50, Charles C. Thomas, publisher, 1954.

5. Dupertuis, S. M., and Musgrave, R. H.: Burn scar contractures of the axilla, Am. Jour. of Surg., 92:68, 1956.

6. Fleming, R. M.: Sarcoma developing in old burn scar, Am. Jour. of Surg., 54:457-465, 1941.

7. Haskins, H. N.: The surgical significance of Marjolin's ulcer, Surgery, 39:645-653, 1956.

8. Heuper, W. C.: Occupational Tumors and Allied Diseases, p. 292, Charles C. Thomas, publisher, 1942.

9. Horton, C. E., and Crawford, H. H., et al.: The malignant potential of burn scar, Plastic and Rec. Surg., 22:348, 1958.

10. Lawrence, E. A.: Carcinoma arising in scars of thermal burns, Surg. Gynec. and Obst., 95:579, 1952.

11. Marjolin, J. N.: Dictionnaire de Medicine, 1828.

12. McLeod, J. M.: Burns and Their Treatment, Oxford University Press, London, p. 15, 1918.

13. Roffo, A. H.: Bol. Inst. de Med. Experimental para el Estudio y Tratamiento de Cancer, 10:241, 1933.

14. Stauffer, H.: Ztschr. F. Krebsforsch, 28:418, 1929.

15. Thompson, A. R.: The Medical Press, p. 578, 1953.

16. Treves, N., and Pach, G. T.: Surg., Gynec. and Obst., 51:749, 1930.

17. Urist, M. R.: Trauma and neoplasm, Am. Jour. of Surg., 93:682, 1957.

Geriatric In-Patients

The Precipitating Cause of Admittance to the State Hospital

DANIEL A. GRABSKI, *M.D.*, Norwalk

• The case records of 100 patients over the age of 60 at the time of their admission to a state mental hospital in California were evaluated, using rigid criteria to determine whether the precipitating cause for their state hospitalization was due to a deterioration of their mental state or a change in their socio-environmental milieu. The results of the study indicated that 77 per cent of these patients were in hospital because of a deterioration in their own mental state while 23 per cent were there because of a deterioration in their socio-environmental milieu. The data also were indicative that the proportion of patients put in hospital because of a deterioration in their socio-environmental milieu might conceivably be higher than 23 per cent if subtle changes in family attitude towards the patient could be adequately evaluated.

NUMEROUS OBSERVERS have noted that more and more geriatric patients have been put into state hospitals during the past decade. The increase in the number is far greater proportionally than the increase in the aged in our population.[1] Several contradictory theories have been propounded to explain this increase.[3,5]

In the present study a small group of patients were evaluated in detail in an attempt to determine the precipitating causes for their admittance to a state hospital in California.

It is recognized that the sample under study may not be representative of national conditions, or for that matter even that of the entire State of California. Commitments from Los Angeles County run statistically lower than those of the less populous counties and an active screening and counseling service offered by the counselors in mental hygiene of the Los Angeles Superior Court is considered largely responsible for this fact.

One hundred consecutive admissions of patients aged 60 or over at the time of admission to the Metropolitan State Hospital, between February and June of 1958, were chosen for evaluation regarding the precipitating cause for admittance.

Information on the case records of these patients was gathered from the following sources:

1. From the patient through the standard anamnesis of the admitting psychiatrist.
2. The legal documents and sworn statements that brought about or enabled the commitment or admittance.
3. The anamnesis as completed by a close family member.
4. Evaluation reports from previous hospitals, including the general hospital while the patient was awaiting the commitment proceedings.

Of this information, the family anamnesis was considered the most valuable. This was most frequently submitted in the close relative's own handwriting and expressed, in much detail—not only the historical data surrounding the patient but also the attitudes of the family members toward the patient. At times evidence of gross family defensiveness was obvious. Perhaps the least valuable information was that obtained by the admitting psychiatrist in routine interview of the patient, for the patients are often confused and disoriented or suspicious and guarded at the time of admittance. In many instances it seemed the hospital was a refuge the patient did not want to jeopardize by discussing.

The information obtained from the above sources was classified into two sections: That in which the mental status of the patient deteriorated, requiring that he be put in hospital; and that in which conditions in the patient's environment changed or deteriorated and resulted in his admittance. Trying for objectivity in a clinical study of subjective data is, of course, fraught with possibility of bias. Information was evaluated in full recognition that arbitrariness was a factor in decision as to category.

The following criteria were used as indicators of deterioration of the patient's mental condition.

1. Self-destructive behavior, including attempts at suicide or serious threats of suicide.

2. Deviant behavior, including the following: (a) Assaultiveness to person or destructiveness to property. (b) Actions based on hallucinations or delusional thinking. (c) Creation of frequent neighborhood disturbances. (d) Bizarre behavior of minor degree requiring 24-hour per day supervision. (e) Withdrawal and apathy with lack of concern over primary bodily needs.

Presented before the Section on Psychiatry and Neurology at the 89th Annual Meeting of the California Medical Association, Los Angeles, February 21 to 24, 1960.

TABLE 1.—*Reason for Admittance of 100 Geriatric Patients to a State Hospital*

	Patient's Condition	Environment
Male	25	13
Female	52	10
	—	—
Total	77	23

3. The inability (for other than economic reasons) of a private sanitarium or nursing home to care for the patient.

The following is the list of criteria indicating deterioration in the patient's social environmental conditions precipitating his admittance to hospital.

1. No home.
2. No one willing or able to care for the patient.
3. Obvious serious physical illness requiring intensive and immediate medical care.
4. Commitment incidental to police investigation.

These criteria are grossly evaluated and it is not possible to infer subtle changes in attitude toward the patient from the available data.

The results of this study indicated that 77 per cent of the patients admitted to the state hospital were admitted because of a deterioration in the individual patient's mental condition, while 23 per cent were admitted because of deterioration in the patient's physico-socio-environmental milieu (Table 1).

DISCUSSION

Psychiatrists will see more and more patients who are in their sixties and seventies and older age brackets. The aged population in the United States has increased by more than 11.5 million persons since the turn of the century. In 1900 there were only 3,800,000 persons 65 years of age or over. By 1958 this age group numbered an estimated 15,000,000. While the United States' population has doubled during this period, the number of those aged 65 and over has quadrupled. For a person beyond 65—the "magic dividing line" between middle age and old age—the expectancy of life has not risen by more than two additional years in the last century.[6]

If current trends continue, the future of many of the aged in our population will be to spend their declining years in a state hospital; and many, as has been seen by the data presented, will be there for reasons other than their own mental disturbance.

Kolb[5] expressed belief that it is for sociologic reasons that many old people are sent to mental hospitals rather than for mental health reasons. He said further: "The feeble aged in our complex environment are more difficult to manage than they used to be, and the general attitude toward them has changed, so that people easily convince themselves that institutional life is the proper thing for the feeble old relative. As mental hospitals offer less resistance than other outlets, they drift there in increasing numbers."

Kolb's orientation is admittedly that of a social psychiatrist, but among others with an entirely different point of view who feel that too many aged are being hospitalized in the state hospitals, Horbzczewski, an internist at the Saskatchewan Hospital in Canada, expressed the opinion that vast numbers of aged patients with chronic incapacitating physical illnesses were incorrectly included as psychiatric patients. He said that many of them have few or no psychiatric symptoms, and are in hospitals solely to relieve relatives of tedious nursing needed for incontinence and helplessness, or because they have had to vacate a general hospital bed for patients with acute disease or simply because they have no interested relative. That the physical condition of the geriatric patient is indeed closely related to his admittance to a state hospital can be seen in the informal notation that 20 per cent of the patients in the current study were dead at the time the records were screened, which was only three to six months after their admission.

Bettag,[1]* said that "only one patient in five in these groups [over 65 at admission] will be discharged from our hospitals alive . . . and the other four will end their days under state care." He said that about half of in-patients aged 65 or over in Illinois state hospitals had entered hospital before the age of 65; they were for the most part schizophrenic patients who had been in hospital for long periods. The other half, composed of patients who entered after the age of 65, was composed of patients with cerebral arteriosclerosis and senile brain disease. For them the hospital stay was relatively short and ended with their death. These figures are roughly comparable to the situation in California but we are able to discharge one out of three of our aged patients alive.

Recognizing that nearly one-fourth of the admissions of old persons to state hospitals are the result of conditions other than deterioration of the patient's mental state could be valuable in determining the sector of prophylactic or therapeutic approach with the patient: Should it be directed toward reintegrating the patient through physical, pharmacological or psychological methods—or at manipulating, changing or supporting the social environment?

This critical and fatalistic outlook on the state hospitalization of the geriatric patient is contradicted by an extensive statistical review, in 1954, of geriatric in-patients in the Connecticut State Hospital System.[7] Of 4,178 patients over the age of 60 only 231 in the study could be considered transferable, the impression being that if a geriatric patient was admitted to the state hospital he indeed needed to be there.

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*Otto L. Bettag, M.D., director of the Illinois Department of Public Welfare.

Metropolitan State Hospital, Norwalk.

REFERENCES

1. Bettag, O. L.: Hospitalization of persons over 65 in Illinois state mental hospitals, Geriatrics, 12:107-108, Feb. 1957.

2. Gorman, M.: Every Other Bed, The World Publishing Company, Cleveland and New York, pp. 206-212, 1956.

3. Horbzczewski, J.: Admissions of geriatric cases to mental hospitals, Canadian Med. Assn. J., 78:22-27, Jan. 1958.

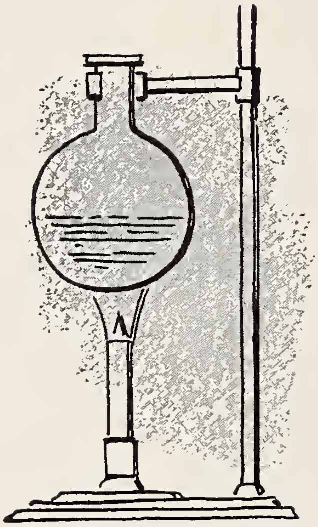
4. Kaplan, O. J.: Mental Disorders in Later Life, Stanford University Press, Stanford, California, 1956.

5. Kolb, L.: The mental hospitalization of the aged; is it being overdone?, Conn. Med. J., 20:966-970, Dec. 1956; also published in Amer. J. Psychiat., Vol. 112, No. 8, Feb. 1956.

6. Metropolitan Life Insurance Company: Statistical Bulletin, Vol. 37, p. 2, Sept. 1956.

7. Shindell, S., and Cornfield, E.: Aged in Connecticut state mental hospitals; a study of persons over 60 years of age, in three Connecticut state hospitals, J.A.M.A., 160:1121-1125, 31, March 1956.

8. Statistical Research Bureau, State of California Department of Mental Hygiene: Informational Bulletin No. 1, April 1958.



California
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EDITORIAL

California Physician Placement Service

Currently twenty-five hundred physicians are licensed in California each year. Two thousand of them come from other states. And even this influx barely keeps pace with the explosive population increase of the state. If the current ratio of 175 physicians per 100,000 population continues, it is projected that by 1975 there will be approximately 45,000 physicians needed in California.

Programs are now being considered that will increase the number of physicians graduated by California schools. It seems unlikely, however, that these programs will fill the projected needs and therefore the influx of physicians from other states will continue at an accelerated pace.

New residents in our state need medical services. The new physician-residents need practice opportunities where their services are most needed.

From this simple bilateral need has grown the Physician Placement Service of the California Medical Association.

The formula is simple; putting the formula to work has not been quite so simple. With a modest beginning several years ago, the C.M.A. offered services to physicians seeking practice locations in California and to physicians already practicing who desired relocation opportunities, associates, partners or *locum tenens*.

With the continued increase in the number of physicians coming into the state, with new communities seeking physicians and many other factors, the Physician Placement Service has continued to expand its operation.

Each month a bulletin is published in which members of C.M.A. may list their needs for associates, partners, replacements and *locum tenens*. The listings include openings in almost every field and category of the practice of medicine. If a member has need for this service, he has only to make that need known to the Placement Service.* The Service will reply to the inquiry with a questionnaire to be filled out and returned. The information in this questionnaire is distilled into a descriptive paragraph that appears in the next issue of the bulletin.

The bulletin, *Opportunities for Practice in California* is sent to approximately 1,500 physicians monthly, including newly licensed physicians, physicians of California who wish to relocate, physicians from other states and countries who wish to come to California to practice, and others. In addition, the bulletin is sent to hospitals that conduct intern and residency programs. The interested physician makes his contact directly with the individual making the listing. The Placement Service makes no attempt to "match" applicant with opportunity.

Communities in need of physicians also list their needs in the bulletin. For new towns and especially those in the rural areas, the availability or unavailability of a physician may alter the entire economy and well-being of the community. With a physician, the area may be self-sufficient and its citizens may count on professional care when it is needed. The same community, without a physician, may find that its residents have to travel many miles and expend an undue amount of time and effort to secure even the most rudimentary medical services.

The Physician Placement Service does not limit its activities to publishing the *Opportunities for Practice* bulletin. The staff is available for personal interviews. With many younger physicians the matter of part-time employment is of importance. Many other items of interest revolve around social, educational, recreational and other needs of physicians seeking locations. Does the community have adequate schools for the physician's children? Are there cultural activities for the physician and his family?

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*Physician Placement Service, 693 Sutter Street, San Francisco 2.

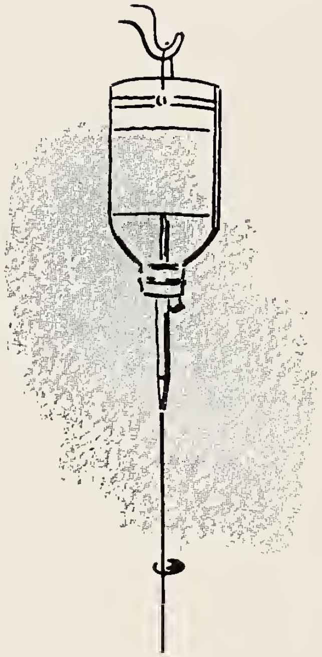
How about recreation? How about professional fellowship and availability?

These questions may seem of minor order, but in fact they are not. The physician who has spent years in the educational process is not eager to take his children into an educationally barren area. The wife who is accustomed to social and cultural activities may turn down a community where medical practice opportunities are favorable but community facilities do not meet her standards. The physician whose hobby is sailing is not likely to choose an inland community as his abode.

Several research projects are now under consideration to find ways of improving the service to physicians and communities.

This operation makes a modest dent in the budget of the California Medical Association. It does cost money to maintain a two-person staff, to collect vital information and to disseminate it to interested parties. But this cost, in terms of service to the public and to the medical profession, is minuscule. It is on the basis of this philosophy that no fees are charged to those using the Service.

The placement of physicians, to be done with objectivity and fairness to all, can best be done within the structure of organized medicine itself. The C.M.A. is doing just this. Here is one field where the public and the professional interests are identical and where medicine can perform a useful and valuable public service.



California
MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 465th Meeting of the Council, San Francisco, Hilton Inn, January 28, 1961.

The meeting was called to order in the Hilton Inn, San Francisco International Airport, by the Chairman, on Saturday, January 28, 1961, at 9:30 a.m.

Roll Call:

Present were President Foster, President-Elect Bostick, Editor Wilbur, Speaker Doyle, Vice-Speaker Heron and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, O'Connor, Shaw, Rogers, Dalton, Murray, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall. Absent for illness, Secretary Hosmer.

Quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Edwards, Tobitt and Drs. Batchelder and Miller of C.M.A. staff; Messrs, Hassard and Huber, legal counsel; Messrs. Read, Salisbury and Fraser of the Public Health League of California; county executives Scheuber of Alameda-Contra Costa, Blankfort of Marin, Lingerfelt of Fresno, Field of Los Angeles, Grove of Monterey, Somerville of Napa, Bannister of Orange, Brayer of Riverside, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson and Pearce of San Joaquin, Wood of San Mateo, Donovan of Santa Clara, Funk of Solano, Brown of Sonoma and Bailey of Tulare; Dr. Malcolm Merrill of the State Department of Public Health; Dr. Walter Rapaport of the State Department of Mental Hygiene; Mrs. Eunice Evans of the State Department of Social Welfare; Messrs. Aubrey Gates and Richard Philleo of the American Medical Association; Messrs. Paolini, Nyron, Heller and Lyon of California Physicians' Service; Doctors Werner Hoyt, Donald Harrington, Dan O. Kilroy, Thomas Elmendorf, Rex Whitworth and others.

1. *Minutes for Approval:*

On motion duly made and seconded, several amendments to the tentative draft of the minutes of the Council meeting held December 10 and 11, 1960, were adopted and the minutes as amended were approved. [Approved version was published in California Medicine, February, 1961.]

2. *Membership:*

(a) A report of membership as of January 26, 1961, was presented and ordered filed.

(b) On motion duly made and seconded, seven delinquent members who had regained active membership in their county societies were voted reinstatement.

(c) On motion duly made and seconded in each instance, three applicants were voted Associate Membership. These were: Carl J. Lutt, Alameda-Contra Costa County; Thomas Arthur Morrison, San Diego County; Lillian Cottrell, Sonoma County.

(d) On motion duly made and seconded in each instance, 17 members were voted Retired Membership. These were: Douglas Stafford, Alameda-Contra Costa County; Philip Hodgkin, Imperial County; Albert Allen, Lucile R. Anderson, Joseph T. Edward, Frank Edison Long, Seth H. Miles, W. G. Scanlon, Erwin Edward Stephens, Albert Valensi, Los Angeles County; A. N. Crain, Orange County; James F.

PAUL D. FOSTER, M.D.	President
WARREN L. BOSTICK, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
SAMUEL R. SHERMAN, M.D.	Chairman of the Council
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Churchill, John Eugene Porter, San Diego County; Hans Esberg, Alice Bepler O'Brien, J. Floyd Runner, Russell C. Ryan, San Francisco County.

On motion duly made and seconded, reductions in dues were voted for 23 members for reasons of illness or postgraduate study.

3. *Financial:*

(a) Chairman Heron of the Finance Committee submitted balance sheets as of December 31, 1960, for the Association and four allied organizations, Trustees of the C.M.A., Physicians Benevolence Fund, Audio-Digest Foundation and Pacific Magnetic Tape Equipment Co. These were reviewed and ordered filed.

(b) A retirement program for employees of the Association, previously approved by the Council, was submitted in detail. Estimated cost for the balance of the current fiscal year was $17,801, which, on motion duly made and seconded, was appropriated by unanimous vote.

(c) On motion duly made and seconded, and on recommendation of the committee, it was voted to reimburse three medical school deans for their expenses in attending meetings in Chicago and Washington in behalf of the Association's educational programs, expenses to come from currently budgeted and available funds.

(d) The Council accepted with thanks the check for $992.50 from Delta Blood Bank, Stockton, representing final repayment on a loan of $36,500 advanced in 1954.

4. *State Department of Public Health:*

Dr. Malcolm Merrill, State Director of Public Health, reported that the first human death from rabies in a number of years had occurred in Imperial County, on the Arizona border. Death resulted from a dog bite and following a course of 14 treatments using duck embryo vaccine.

Dr. Merrill also reviewed the budget submitted by his department for the 1962 fiscal year.

5. *State Department of Mental Hygiene:*

Dr. Walter Rapaport, representing the State Department of Mental Hygiene, reviewed some of the recommendations added to the proposed basic budget of the department. These would call for the establishment of "day hospitals" for daytime care of mental patients, for authority to place patients in private hospitals and rest homes, authority to place patients in private homes and for broadening of the Short-Doyle Act for added care in home areas for mental patients. All are designed, he reported, to eliminate the need for further construction of large state hospitals.

6. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare reported that plans have been completed for participation in the Kerr-Mills legislation to provide added medical services to the aged. A new drug formulary, listing drugs which may be prescribed without limitation, those which are limited by diagnosis and those limited by wholesale price, has been issued. Health evaluation examinations, she reported, will start April 1 for old age assistance applicants between ages 65 and 70. The department will also bring additional benefits for the blind into the present program.

Mrs. Evans reported on several legislative proposals advanced by the department. These will include legislation for matching funds to implement the second stage of the Kerr-Mills Bill, an increase in the maximum allowable pension to aged and blind recipients to provide additional care, tying in benefits with the cost of living index, liberalizing the relatives' responsibility laws and a proposed measure to provide funds on a matching basis for the establishment of local demonstration projects such as senior centers, delivered meals, etc.

7. *Medical Education:*

The chairman read a letter from Dr. J. B. deC. M. Saunders, dean of the University of California School of Medicine, in which he expressed concern over the possible production of poorly qualified physicians under several proposals which have been advanced for the establishment of new medical schools in California. On motion duly made and seconded, it was voted to refer this matter to the Commission on Medical Education for study and suggestions.

On motion duly made and seconded, it was voted to reaffirm a decision of the House of Delegates expressing approval of the establishment of a medical school in the San Diego area.

8. *White House Conference on the Aging:*

Reports were made by Doctors Foster, Sherman and Batchelder on the White House Conference on the Aging, held early in January. On motion duly made and seconded, it was voted that the Committee for Emergency Action, together with the chairmen of the public relations and legislative committees and the delegation to the American Medical Association review the status of the medical profession in the eyes of the public and develop suggestions for bringing about an improvement.

9. *Bureau of Research and Planning:*

Chairman Werner Hoyt of the Bureau of Research and Planning gave an historical and progress report for the bureau and presented a list of proposed research studies which had been assigned a priority rating by the bureau. On motion duly made and seconded, it was voted to approve the priority listings proposed.

Dr. Hoyt left with the Council the question of the Council's determination as to how far the bureau should proceed in initiating policy for the Association. The chairman suggested that this topic be discussed in detail at the March meeting.

The Council approved a report of the Bureau of Research & Planning, "The Role of Government in Medical Care," with slight amendments and ordered that widespread publicity be given this report.

10. *Public Relations:*

Councilor Quinn and Mr. Ed Clancy reported on a meeting held with representatives of allied organizations. Mr. Clancy also reported on a meeting held with county society representatives on January 7, at which a number of local projects to enhance public relations had been described and discussed.

On motion duly made and seconded, it was voted that the Committee on Public Relations be requested to submit to an early meeting of the Council a complete report on the public relations program, finances and objectives.

11. *Committee on Legislation:*

(a) Chairman Dan O. Kilroy, chairman of the Commission on Public Policy, reported that the commission had reviewed a proposed organization which would bring together several professional groups and had been divided on the question of formation of a similar organization in California. It was agreed that the commission should assemble a list of professional organizations in California and determine all areas of mutual or overlapping interest, so that a future report may be made to the Council for further consideration.

(b) Mr. Ben Read reported that 1,260 legislative bills had been introduced in the first 28 days of the legislative session and that 192 of these have some bearing on the public health or the practice of medicine. On motion duly made and seconded, it was voted to oppose two measures, one which would establish a state system of compulsory health insurance and one which would require state licensure for x-ray technicians.

On motion duly made and seconded, it was voted that the committee, in association with the Committee for Emergency Action, prepare a statement of the Association's position on the compulsory health insurance legislation.

12. *Commission on Medical Services:*

Dr. Donald Harrington, chairman, reported for the Commission on Medical Services, the report recommending that all county societies activate or establish mediation committees to review fee complaints, including those brought by insurance carriers, and that the Association establish a statewide mediation committee to coordinate and reinforce the county committees. On motion duly made and seconded, it was voted to approve these proposals in principle and to refer to the Committee on Committees the integration of such a statewide committee into the organization structure.

The Commission also reported that it was believed impossible at this time to effectuate a system of regional professional fees for services under state medical care programs. On motion duly made and seconded, it was voted to refer this subject to the Committee for Emergency Action.

13. *Committee on Committees:*

Chairman Bostick of the Committee on Committees recommended that the present liaison committee between the Commission on Medical Services and California Physicians' Service be expanded by the addition of two members and that the committee henceforth be a direct committee of the Council. He also recommended that a second committee be formed to activate policy decisions reached between the Council and the Trustees of California Physicians' Service. On motion duly made and seconded, these recommendations were approved and Doctors Donald Harrington and Carl Anderson were added to the liaison committee.

14. *1961 Annual Session:*

Speaker Doyle of the House of Delegates outlined the plans for the meetings of the 1961 House of Delegates, reporting that meetings would be held Saturday afternoon, Sunday morning, Tuesday afternoon and Wednesday morning. On motion duly made and seconded, this schedule was approved. Proposed seating arrangements in the House of Delegates, with alternates to be seated with delegates, were also approved.

On motion duly made and seconded, it was voted that for the dinner to honor the Presidents of the Association and the Woman's Auxiliary, a reception for invited guests be held for one hour and a social hour for all those attending the dinner be held at another hour, the cost of the dinner tickets to include the social hour.

15. *Rehabilitation Services:*

Councilor Anderson presented a resolution calling attention to the establishment of in-patient rehabilitation services for Old Age Assistance recipients and requesting that the State Department of Social Welfare modify its regulations to allow the appointments within each county of qualified medical consultants who should be authorized to rule upon the removal of such patients to distant facilities for evaluation and treatment. The resolution also asked that the Committee on State Medical Services be requested to review the regulations and make such other recommendations as might be indicated. On motion duly made and seconded, this resolution was approved.

16. *Committee on Maternal and Child Care:*

Dr. Rex Whitworth requested authority for the Committee on Maternal and Child Care, through its subcommittee on perinatal mortality and morbidity, to undertake studies of hemolytic disease of the newborn in conjunction with the State Department of Public Health. It was brought out that similar studies are being undertaken by other agencies and that duplication should be avoided. On motion duly made and seconded, it was voted to refer this proposal to the Committee on Committees for further study and recommendation.

17. *California Physicians' Service:*

Dr. John Morrison reported that the ad hoc committee to study the MD-65 program of California Physicians' Service had recommended that payments to physicians be placed on a factor 4 basis and that further enrollments in this program be discontinued at this time. On motion duly made and seconded, these recommendations were approved.

The Council also approved in principle several proposals of the ad hoc committee which would expand the benefits of the MD-65 program by adding hospitalization and other benefits. These proposals are to be reported to the C.P.S. Board of Trustees and reported later to the Council.

Dr. Morrison also reported that following meetings with the Committee on Fees, two new schedules for C.P.S., schedule "D" and schedule "E." had been approved, based on factors 5 and 6, respectively, on the 1960 Relative Value Studies. These factors would cover all sections of the studies and be subject to later application of variable factors as between the sections, as determined by the Committee on Fees.

18. *Committee on Industrial Health:*

Dr. MacLaggan presented the recommendation of the Committee on Industrial Health for renewed attempts to secure more equitable fees for industrial injury services. It was pointed out that adjustments in such fees require considerable time and that policy has been to reopen this matter about each two years.

The committee also requested that its name be changed to "Committee on Occupational Health." Such a change would require an amendment to the By-Laws.

19. *Commission on Professional Welfare:*

Chairman Kirchner of the Commission on Professional Welfare called attention to a regional conference on medical-legal matters to be sponsored by the American Medical Association in San Francisco on March 10 and 11. The Commission requested authority to provide a reception for this gathering on March 10 and, on motion duly made and seconded, such authority was voted.

Dr. Kirchner also announced that the underwriters of the Association's disability insurance contract had agreed that cash dividends would be paid late in the year to members who are currently covered and who have participated in the plan in the past.

Adjournment:

After a brief period of executive session and there being no further business to come before it, the meeting was adjourned at 6:30 p.m.

Samuel R. Sherman, M.D., *Chairman*
John Hunton, *Acting Secretary*

4 POSTGRADUATE COURSES

C.M.A. ANNUAL SESSION • *April 29–May 3, 1961* • *Los Angeles*

THE CALIFORNIA MEDICAL ASSOCIATION *in cooperation with the Medical Schools of* UNIVERSITY OF SOUTHERN CALIFORNIA *and* COLLEGE OF MEDICAL EVANGELISTS, *will present four Postgraduate Courses at the time of the Annual Session in April. These courses will be clinically oriented and will include case presentations.*

Choose the course which most interests you, follow the course, and the 1961 session will send you back to your practice stimulated and refreshed.

Look for the program giving complete details which will arrive in your office in March.

• By COLLEGE OF MEDICAL EVANGELISTS

Clinical Neurology—9 hours

Time: Sunday, April 30, 9:00 a.m. to 12:00 noon; Monday and Tuesday, May 1 and 2, 2:00 p.m. to 5:00 p.m.

Place: White Memorial Hospital. *Fee:* $25.00

• By UNIVERSITY OF SOUTHERN CALIFORNIA

Uses and Limitations of Laboratory Tests—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: Los Angeles County Hospital. *Fee:* $25.00

Practical Gynecology—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: USC School of Medicine. *Fee:* $25.00

Cardiac Resuscitation—2 hours

SECTION I*—Saturday, April 29, 9:00 a.m. to 11:00 a.m.

SECTION II*—Sunday, April 30, 2:00 p.m. to 4:00 p.m.

Place: USC School of Medicine. *Fee:* $30.00

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*Each Section is all-inclusive. Each Section is limited to 15 registrants from areas other than San Francisco or Los Angeles.

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Please enroll me in the course indicated by ✓.

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☐ 2. Uses and Limitations of Laboratory Tests (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 3. Office Gynecology (9-hour course, Saturday, all day; Sunday morning)—$25.00

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☐ 4b. Cardiac Resuscitation—Section II—Sunday afternoon—$30.00

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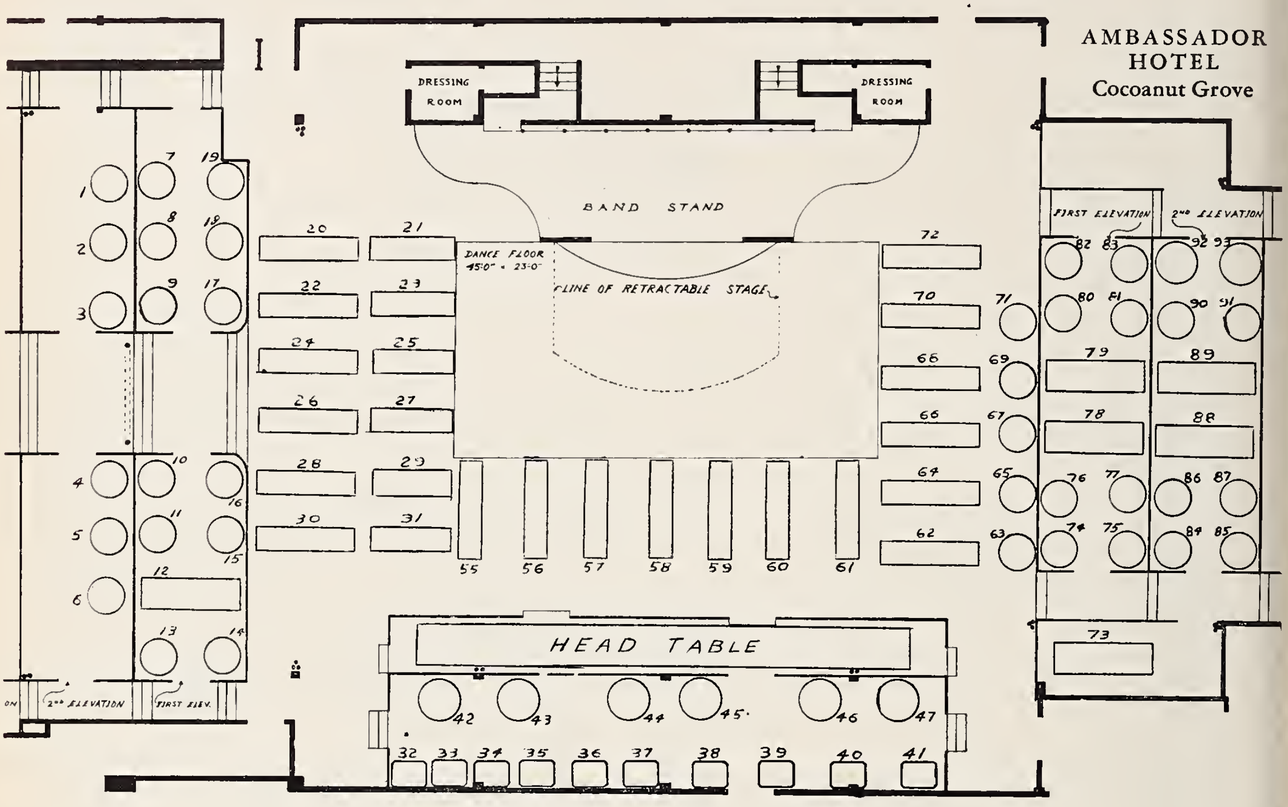

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1	4	19	4	36	2	61	12	78	12
2	6	20	10	37	2	62	12	79	12
3	4	21	10	38	2	63	4	80	6
4	4	22	10	39	2	64	12	81	4
5	6	23	10	40	2	65	4	82	4
6	4	24	10	41	2	66	12	83	6
7	4	25	10	42	8	67	4	84	4
8	4	26	10	43	8	68	12	85	6
9	4	27	10	44	8	69	4	86	6
10	4	28	10	45	8	70	12	87	4
11	4	29	10	46	8	71	4	88	12
12	12	30	10	47	8	72	12	89	12
13	4	31	10	55	12	73	10	90	6
14	4	32	2	56	12	74	4	91	4
15	6	33	2	57	12	75	6	92	4
16	4	34	2	58	12	76	6	93	6
17	4	35	2	59	12	77	4		
18	6			60	12				

GO to the . . .

Presidents' Dinner-Dance

SUNDAY, APRIL 30, 8 p.m.

Cocoanut Grove

Reception: EMBASSY ROOM—7 p.m. to 8 p.m.

Entertainment

Music for Dancing

Food: Prime Rib Dinner

Cost: $15.00 per person including reception, tax, tip and cover

TICKETS ARE NOW ON SALE—USE COUPON BELOW

Your tickets will be held for you at the loor to the Embassy Room. A receipt for our check will be sent to you. Please resent this receipt at the door for your icket, Sunday night.

OR

Tickets may be picked up at any time Sunday morning or afternoon, April 30, at ticket booth, Woman's Auxiliary registration desk.
Requests for tables for large parties should be sent in one envelope and early.

MISS LOUISE KALINICH
Los Angeles County Medical Association
1925 Wilshire Boulevard
Los Angeles 57, California

Enclosed is my check for $________. Please send me________ticket(s) to the PRESIDENTS' DINNER-DANCE, Sunday, April 30, 1961.

Table Choice________ ________ ________ —or assign next best available________
(Number) 1st 2nd 3rd

Name________

Address________

____

(Make checks payable to the California Medical Association)

11th ANNUAL

REGIONAL POSTGRADUATE INSTITUTE

SAN JOAQUIN VALLEY COUNTIES

Presented by the California Medical Association Committee on Postgraduate Activities, in cooperation with Fresno, Madera, Kings, Tulare, Kern, Merced-Mariposa, Inyo-Mono and Stanislaus County Medical Societies and the Department of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Los Angeles, Thomas H. Sternberg, M.D., Assistant Dean, Department of Continuing Education in Medicine and Health Sciences.

Guest Speaker: JOHN M. KINNEY, M.D., Associate in Surgery, Harvard Medical School at Peter Bent Brigham Hospital, Boston.

Ahwahnee Hotel, Yosemite National Park

April 14 and 15, 1961

PROGRAM

FRIDAY, APRIL 14

Morning Meetings

THE ACUTE ABDOMEN

9:15-10:00—**Medical Aspects**—John C. Sharpe, M.D.

10:00-10:45—**Electrolyte Problems—Pre- and Postoperative**—John M. Kinney, M.D.

11:00-11:45—**Surgical Aspects**—Wiley F. Barker, M.D.

11:45-12:15—**Panel Discussion**—Wiley F. Barker, M.D., John M. Kinney, M.D., John C. Sharpe, M.D.

Afternoon Meetings

2:00-2:45—**Autoimmune Diseases**—Victor D. Newcomer, M.D., Carl M. Pearson, M.D.

2:45-3:30—**Virus Diseases—Diagnosis and Management**—John M. Adams, M.D.

3:45-5:00—**BLOOD TRANSFUSIONS:**

Uses and Abuses—Wiley F. Barker, M.D.

Problems of Multiple Transfusions—John B. Dillon, M.D.

Uses of Blood and Blood Fractions from the Los Angeles Red Cross Blood Center—Eugene P. Adashek, M.D.

ELECTIVES

2:00-2:45—**Newer Aspects of Hand Surgery**—Franklin L. Ashley, M.D.

2:45-3:30—**Recurrent Abdominal Pain in Children**—Harry F. Dietrich, M.D.

7:00-8:00—**"No-Host" Cocktail Party.**

8:00—**Dinner-Dance.**

SATURDAY, APRIL 15

Morning Meetings

MANAGEMENT OF TRAUMA

9:15-9:55—**General Principles**—Wiley F. Barker, M.D.

9:55-10:35—**Resuscitation**—John B. Dillon, M.D.

10:50-11:30—**Maxillo-Facial Injuries**—Franklin L. Ashley, M.D.

11:30-12:15—**Panel Discussion**—Moderator: Wiley F. Barker, M.D.; Panel: Franklin L. Ashley, M.D., Eugene P. Adashek, M.D., John B. Dillon, M.D., John M. Kinney, M.D.

ELECTIVES

10:50-11:30—**Laboratory Tests Useful in Rheumatoid Disease**—Carl M. Pearson, M.D.

11:30-12:15—**Current Status of Treatment of Fungi**—Victor Newcomer, M.D.

Afternoon Meetings

2:00-2:45—**Diagnostic and Immunization Procedures in Childhood**—John M. Adams, M.D., Harry F. Dietrich, M.D.

3:00-3:45—**What Is an Adequate Physical Examination**—John C. Sharpe, M.D.

3:45-5:00—**Skin Tumor Clinic**—Franklin L. Ashley, M.D., Victor D. Newcomer, M.D.

ELECTIVE

2:00-2:45—**Medical Diseases of the Back**—Carl M. Pearson, M.D.

HOST: Fresno County Medical Society . . . **REGIONAL CHAIRMAN:** J. Malcolm Masten, M.D., 1051 R Street, Fresno, California . . . **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

In Memoriam

ADLER, MURRAY LAURENCE. Died October 26, 1960, aged 44, of coronary thrombosis. Graduate of New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1947. Licensed in California in 1955. Doctor Adler was a member of the Los Angeles County Medical Association.

✣

BARTHOLOMEW, TRUMAN EMORY. Died in Tulare, February 4, 1961, aged 65, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1928. Licensed in California in 1928. Doctor Bartholomew was a member of the Tulare County Medical Society.

✣

BERGMAN, MACKS LEONARD. Died in Inglewood, December 18, 1960, aged 52, of a coronary. Graduate of the University of Vermont College of Medicine, Burlington, 1936. Licensed in California in 1945. Doctor Bergman was a member of the Los Angeles County Medical Association.

✣

CHRISTENSEN, WILLIAM MELVIN. Died in Glendale, January 21, 1961, aged 66. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1924. Licensed in California in 1924. Doctor Christensen was a member of the Los Angeles County Medical Association.

✣

DECKER, KATHLEEN HOGAN. Died in an auto crash, January 9, 1961, aged 32. Graduate of the University of Minnesota Medical School, Minneapolis, 1954. Licensed in California in 1956. Doctor Decker was a member of the Los Angeles County Medical Association.

✣

HUNTER, WARREN ELLIS. Died January 5, 1961, aged 58. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1928. Licensed in California in 1928. Doctor Hunter was a member of the Los Angeles County Medical Association.

✣

HUNTINGTON, BERT ROY. Died January 15, 1961, aged 81. Graduate of the State University of Iowa College of Medicine, Iowa City, 1907. Licensed in California in 1925. Doctor Huntington was a member of the Los Angeles County Medical Association.

✣

KAHN, JULIUS. Died February 4, 1961, aged 65. Graduate of Rush Medical College, Chicago, Illinois, 1921. Licensed in California in 1922. Doctor Kahn was a member of the Los Angeles County Medical Association.

✣

KELLOGG, WILLIAM A. Died February 3, 1961, aged 75. Graduate of Columbia University College of Physicians and Surgeons, New York, New York, 1913. Licensed in California in 1927. Doctor Kellogg was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

LACAYO, JOSE RENATO. Died January 21, 1961, aged 64. Graduate of the University of Buffalo School of Medicine, New York, New York, 1926. Licensed in California in 1928. Doctor Lacayo was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

MILLER, NEWTON. Died in Porterville, January 7, 1961, aged 81. Graduate of Rush Medical College, Chicago, Illinois, 1924. Licensed in California in 1926. Doctor Miller was a member of the Tulare County Medical Society.

✣

MOODY, ADELBERT MONTAGUE. Died in San Francisco, January 28, 1961, aged 78. Graduate of Rush Medical College, Illinois, 1910. Licensed in California in 1923. Doctor Moody was a member of the San Francisco Medical Society.

✣

NEWTON, EARL BURDETTE. Died in Oakland, February 2, 1961, aged 77, of heart failure due to hypertensive arteriosclerotic cardiovascular disease with congestive failure. Graduate of the Stanford University School of Medicine, Stanford-San Francisco, 1922. Licensed in California in 1922. Doctor Newton was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

ROYER, J. ELLIOTT (JESSE). Died in Belmont, January 7, 1961, aged 79, of cerebral arteriosclerosis. Graduate of the University Medical College of Kansas City, Missouri, 1907. Licensed in California in 1925. Doctor Royer was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

RUSSELL, RILEY. Died January 27, 1961, aged 85. Graduate of the George Washington University School of Medicine, Washington, D. C., 1908. Licensed in California in 1922. Doctor Russell was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

SKELTON, LEONARD W. Died in San Marino, January 23, 1961, aged 64. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1924. Licensed in California in 1924. Doctor Skelton was a member of the Los Angeles County Medical Association.

✣

STOCK, GEORGE E., JR. Died February 3, 1961, aged 46. Graduate of New York University College of Medicine, New York, 1940. Licensed in California in 1947. Doctor Stock was a member of the San Diego County Medical Society.

✣

THOMPSON, ROBERT HOFER. Died January 29, 1961, aged 57. Graduate of the University of Oregon Medical School, Portland, 1931. Licensed in California in 1931. Doctor Thompson was a member of the Los Angeles County Medical Association.

✣

TURNBULL, FREDERICK MYLES. Died January 13, 1961, aged 75. Graduate of McGill University Faculty of Medicine, Montreal, Quebec, 1909. Licensed in California in 1926. Doctor Turnbull was a member of the Los Angeles County Medical Association.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

No OUTBREAKS or laboratory confirmed individual cases of influenza have been reported in California since the termination of the epidemic of influenza which occurred about a year ago.

The U. S. Communicable Disease Center reports that the situation is similar throughout the nation, with only sporadic reports of laboratory confirmed cases of Influenza A having come to its attention.

The department's Influenza Surveillance Unit is again using a variety of public and private agencies as listening posts to detect early occurrence of influenza and influenza-like illnesses in the community.

The surveillance network reports the following: School absenteeism, which involves the observation of some 100,000 children, is running at the normal expected rate of 6 to 8 per cent; employee absenteeism at several industrial plants and public agencies is normal and without any unusual absenteeism reported so far this year; reports of respiratory illness among various population groups, and including institutions and hospitals, show no indication of unseasonal increases in influenza-like illness.

The department recommends routine annual immunization of persons at all ages who suffer from chronic debilitating disease; also pregnant women, and all persons 65 years of age and older. The commercially available influenza vaccine is an aqueous, polyvalent preparation containing three strains of Type A and one strain of Type B killed influenza virus and is produced with the same composition by several manufacturers.

* * *

Survival rates for patients with cancer have been computed by the department through 237 billion arithmetic calculations on electronic data processing machines.

The tabulations, performed by the Bureau of Vital Statistics and Data Processing, describe survival rates by patient age and sites of cancer among the 110,000 cases of neoplasm in the California Tumor Registry. The information will be published late this year in a monograph, "Cancer Registration and Survival in California."

* * *

The Los Angeles City Health Department has joined a nationwide U. S. Public Health Service study to evaluate the effectiveness of INH (isonicotinic acid hydrazide) in preventing reactivation of tuberculous disease.

Selected patients with inactive tuberculosis will be given INH for one year. They will be evaluated by x-ray examination at the end of the year and then annually for several years. Individual reports will be combined with those from other areas in the nation to determine whether reactivation of disease can be prevented.

If INH prophylaxis proves successful for this group of patients, a powerful technique will be added to aid in the eradication of tuberculosis. Previous studies using the drug have shown that children can be protected from many of the complications of primary tuberculosis.

* * *

A training plan for nursing home administrators as a step toward improvement of patient care has been initiated by the State Health Department in a contract with the Attending Staff Association of Rancho Los Amigos Hospital, Los Angeles.

* * *

Oxides of nitrogen concentrations of over 3.0 parts per million in the atmosphere have been measured in Los Angeles on two recent occasions. A value of 3.0 ppm represents that district's "first alert" level, and marks the first instances in which air pollutants other than ozone have reached the Los Angeles first alert values.

The concentrations were not considered to present a danger to the public health. However, they are very high values for the atmosphere of communities and present a number of important problems. Since these concentrations are already high, there is concern over further increases. In addition to the concern over oxides of nitrogen because of toxic effects, these compounds at present concentration levels react in the atmosphere with hydrocarbons to produce smog.

Oxides of nitrogen are produced from combustion sources. Motor vehicle exhaust is one of the most important of these. It has been estimated that motor vehicles contribute more than half of all the oxides of nitrogen found in the Los Angeles atmosphere.

Letters to the Editor...

Children, the Victims of Fragmentation Of Health Services

Children are important. They are the men and women of tomorrow. Their physical, mental, and emotional well-being is the responsibility of the medical and allied professions. There is a great deal of money, public (federal, state, and local) and private. (a charity fund for every day of the year) expended and yet it is practically impossible to finance adequately simple programs of child care. The delinquency rate. the neurotic and psychotic statistics. indicate that such programming is important and should be supported.

At the end of World War II the Academy of Pediatrics sponsored a nationwide study of health services for children. I participated in the study and for several years thereafter attended national committee meetings concerned with medical education leading to better child health care. For the past 10 to 15 years as Chief of Pediatrics at Children's Hospital I have tried to analyze the nearly insurmountable problems encountered in programming for children in need of special help. This communication is an attempt to record the findings of this study. Three different groups of children will be briefly reviewed: (1) The handicapped child, (2) the deprived child, and (3) the health problems of the normal child.

The Handicapped Child

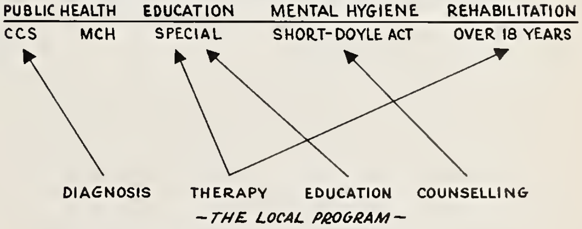
Children with a chronic or longterm handicap such as central nervous system disease, blindness. deafness. cardiac anomalies, metabolic diseases, congenital defects, etc., need planning, as follows: (a) diagnosis, (b) therapy, (c) education, and (d) counseling. The planning and staffing for this type of program is not difficult nor unduly expensive, especially if the preventive aspects of such programming are considered. The financing and the execution of the program is well nigh impossible. Diagram 1 is an attempt to clarify the reasons. Money for diagnosis of some diseases can be obtained through Crippled Children Services. The C.C.S.. however. has grown haphazardly and new diseases have been added without overall planning. This leads to some difficulty. The Crippled Children Services should be reviewed and the diseases coming under their jurisdiction reevaluated. This should not be too difficult a procedure and certainly calls for pediatric participation in any such reevaluation.

Diagnosis, however, is the easiest part of the problem. When therapy is contemplated the Crippled Children Services give very little direct assistance except for surgical procedures. The daily therapy. for instance, of the cerebral palsy child is administered only through the school system and the financing comes down through the Department of Education. Crippled Children Services can participate in therapy for the cerebral palsy child only through this system. The clinics for the cerebral palsy child are set up in the School Department. Originally these clinics were conducted by orthopedists and to a large extent they still are so conducted. It a patient has minimal motor involvement but a learning problem such as an expressive aphasia. he is not eligible for such a clinic. If he is too handicapped to be educable, he has no choice for therapy except through the school clinic. As the crippling problems became recognized earlier in the child's life, schooling was pushed back to accommodate the kindergarten children and then the nursery school children. Now that these conditions are often recognized at birth or shortly thereafter, these babies have to go to the school clinic to get any help and usually the type of help that is given in the school clinic is not either what the child or the parents need.

Legislation for day care for the severely handicapped uneducable child is also in the hands of the Department of Education. This group of children need nursing care as they are untrained, they are not educable and usually not trainable, they are subject to convulsions. Physiotherapy and occupational therapy will help them some but mostly they present a problem of day custodial care. It is "baby-sitting" and educators should spend their time at something besides baby-sitting. These day care centers should be under pediatric supervision and associated with hospitals.

The education and training of the handicapped child is also exclusively in the hands of the educators. There are state schools for cerebral palsy, the blind, and the deaf; there are local schools for children with motor handicaps; there are schools and classes for the deaf, the blind, and the retarded. The function of each of these schools is clearly defined

DIAGRAM 1- FRAGMENTATION OF SERVICES



CCS = CRIPPLED CHILDREN SERVICES.
MCH = MATERNAL CHILD HEALTH.

and limited. The admission, retention, or expulsion of a pupil is under the control exclusively of the educators.

A handicapped child rarely escapes with only one handicap. There is no provision made for a cerebral palsy child who is blind and/or deaf. The deaf school will not take him; the blind school will not; and the cerebral palsy school will not accept him. The same applies to a hyperkinetic child with or without retardation. A similar policy is practiced in the state school for these handicaps.

A handicapped child needs repeated evaluation and the parents need counseling. This calls for the services of psychologists and social workers. State money for such services comes through the Mental Hygiene Division, more particularly the Short-Doyle Act. Again, these funds are so delimited and their use so defined that it has been impossible to utilize these monies for help for either the handicapped or retarded in the program.

The rehabilitation services of the state, again a separate department, are limited primarily to adults over 18.

The private charity fund drives raise a tremendous amount of money and our people are willing to give to these funds. Again, each charity clearly defines its function. It will support only its own specific disease and only in its own prescribed manner. The result is that children in need of help either fall between the charities or their heads fall in one classification and their feet in another. The charity table is heaped with good intentions but the children and the programs aimed at helping these children get only the crumbs that fall from this table.

A possible solution to the above fragmentation at the state level would be removal of the children from all of these divisions and the creation of a special department for the handicapped child. This naturally should be in the Department of Health with a pediatrician in charge. Members of the other divisions, namely, Education, Mental Hygiene, and Rehabilitation, should work in close cooperation but be ancillary to the pediatrician in charge of such a division.

At the local level the programming and habilitation for these services should be in hospitals, again, under pediatric supervision. The clinics should be removed from schools where they do not belong and placed in hospital settings.

Those in charge of the charity funds should make a determined effort to look at the children and their needs and support these programs accordingly rather than by the sharp delineation which is now practiced. It would be timely also to determine how much of these funds are "consumed" before they reach the children.

The Deprived Child

The Public Welfare Department has a division known as Aid to Needy Children (A.N.C.). This aid, however, includes the parents, primarily the mother, of the needy child. The medical program, probably in part to economize by utilizing existing facilities but also possibly in order to please the private physician, was set up as follows: (1) Well child care was to be obtained through the existing well baby clinics; (2) hospitalization, when necessary, was delegated to the county hospital; (3) private physicians would be paid for making home calls on the sick. The result of this program is a discontinuity of care that baffles the patient and has completely discouraged the physician. The private physician can treat an A.N.C. child for diabetes but if that child gets a severe infection or goes into diabetic coma he is sent to the county hospital to be treated by a new set of doctors. Pediatricians have told tales of how after a diagnosis of acute appendicitis or pneumonia the child was sent to the county hospital only to be sent home with the statement that he was eligible for private care. These tales are innumerable.

In order to eliminate some of this fragmentation a group of pediatricians, after meeting and discussing the problem, suggested the following, namely, that well child and routine care be in existing hospital clinics, including the well baby clinic in the hospital. This same hospital should then be utilized for any illnesses of the patients registered with them. A group of staff physicians would volunteer to make home calls on patients so registered. This suggestion has been sent to the local county medical society and to the community chest.

The Normal Child

Practically all specialties in medicine see children in some capacity and yet most of the physicians in specialties other than pediatrics have had little or no training in childhood diseases or with children per se beyond that given in undergraduate medicine. There is now a tendency to have straight internships and even in many rotating internships pediatrics is reduced to one month. This lack of training in the characteristics of the young has serious implications. The toxicity of drugs is not sufficiently tested for the young with consequences such as blindness from excess oxygen, gray baby deaths from chloromycetin, etc.

The hazards of radiation have been given a little more attention but this is still largely in the "lip service" stage.

Although there is an increasing number of pediatricians in the subspecialties such as allergy, metabolic diseases, cardiology, hematology, etc., these conditions are still often handled by internists who know a great deal about the disease but very little about the child, his growth, or his ego needs.

The surgical specialties are the greatest offenders. These add to the hazards of medication and emotional trauma those of anesthesia and hypoxia to the growing brain. Frequently also, because of lack of knowledge of the child, water intoxication occurs or excess blood is given. The pediatric surgeon has had a formidable struggle indeed to get recognition.

Since children are our greatest asset, the medical school should not end the study of growth of human beings with the completion of the course in embryology. Growth, development, maturation, aging, and ecology should be a basic course in the medical school continuous through the undergraduate years. Every specialty and subspecialty that deals even remotely with children should be required by their respective boards to have an intensive course in pediatrics before certification.

Although this communication deals with children, the same situation probably exists to a varying degree in all of medicine and the allied services. Is it not opportune that as physicians we take some active steps to remedy it?

H. E. Thelander, M.D.

San Francisco

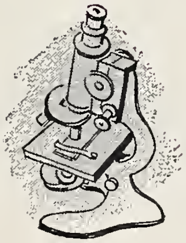
What Constitutes an Adequate Exploration in the Abdomen

Not infrequently exploration of the abdominal-pelvic viscera at laparotomy is an exceedingly casual affair. Two recent cases which have come to my attention, point up the necessity of carrying out the above in an orderly and detailed fashion if the patient is to receive the best we have to offer in the way of treatment when the abdominal cavity is opened. Both cases were those of intestinal bleeding in which duodenal deformities were demonstrated by x-ray. The hemorrhage was massive and the patients were explored. In neither case was the gastrointestinal bleeding from the duodenal ulcer, yet in both, definitive surgical treatment was carried out for a duodenal ulcer. In both instances the patients bled again and subsequent therapy of a surgical nature was required. In one instance a re-resection was carried out without benefit to the patient and in the other instance the patient was found to have a Meckel's diverticulum from which he was bleeding. In the first instance the patient finally succumbed to the hemorrhage and at autopsy a large gastric ulcer high in the stomach was detected which had not been demonstrated by x-ray nor had it been diagnosed at the time of exploration. These are merely two incidences which could have been eliminated had adequate exploration been carried out.

The pancreas and the adrenal glands are other structures that are often neglected during examination. Except in emergency conditions, it should be the invariable practice of all surgeons who open the abdomen, to palpate every structure within the abdominal-pelvic cavities and to record the observations in the operative notes. To complete an exploration and describe such at the end of an operation with the note, "The remainder of the abdominal exploration was negative," or to have only some abdominal viscera described in the operative note with no mention of the other organs, is poor practice and one which, unfortunately, is common today. A system for exploration should be developed by every surgeon. One method is to explore the pelvic and abdominal cavity starting at a point usually removed from the site of pathology anticipated or known pathologic condition. In dictating the operative report, every structure is described and recorded including all intraperitoneal as well as extraperitoneal organs which are palpable through abdominal incisions. This is particularly important in relation to the kidney and pancreas for routine exploration enhances one's ability to detect and distinguish diseases of the pancreas and kidney when they are present.

Gordon F. Madding, M.D.

Burlingame



NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

The second annual **Medical Assembly at Saint Joseph Hospital** in Burbank will be held Friday and Saturday, March 24 and 25, in the hospital auditorium. The subject for the assembly will be endocrinology.

Members of the faculty are: Gerson R. Biskind, M.D., chief of the Department of Pathology at Mount Zion Hospital in San Francisco and associate clinical professor of pathology at the University of California Medical School; Edwin H. Ellison, M.D., professor and chairman of the Department of Surgery, College of Medicine, Marquette University; Warren R. Lang, M.D., associate professor of obstetrics and gynecology, Jefferson Medical College, Philadelphia; Robert M. Blizzard, M.D., associate professor of pediatrics and chief of the division of pediatric endocrinology at Johns Hopkins University School of Medicine; and Albert Segaloff, M.D., associate professor of clinical medicine at Tulane University.

* * *

Speakers at the annual **Brennemann Lectures** of the Los Angeles Pediatric Society, to be held November 8 and 9, 1961, at the Ambassador Hotel, will be Dr. Charles A. Janeway, chairman of the Department of Pediatrics, Harvard Medical School, and Dr. Robert Blizzard, chief of pediatric endocrinology, Johns Hopkins School of Medicine.

* * *

A merger of **Cedars of Lebanon Hospital** with **Mount Sinai Hospital** was announced as officially accomplished early in February. Under the new name, Cedars of Lebanon-Mount Sinai Hospitals, the consolidated organization with combined bed capacity of 790 will continue to operate the present facilities while laying plans and seeking a site for a proposed new $50,000,000 Los Angeles Jewish Medical Center with at least a thousand beds.

Dr. Leo G. Rigler is executive director of the merged hospitals.

* * *

Dr. Catherine G. Pearson has been elected president of the **Los Angeles Society of Allergy,** Dr. Sheldon C. Siegel, vice-president, and Dr. Milton A. St. John, secretary-treasurer.

* * *

Dr. Philip B. Hartley has been elected president of the **Long Beach Obstetrical and Gynecological Society** for this year, Dr. William L. Boucher, vice-president, Dr. Donald E. King, treasurer, and Dr. Richard J. Cach, secretary.

SAN FRANCISCO

A limited number of vacancies are now available for **medical officers** in the 146th Evacuation Hospital, according to an announcement by Dr. Robert C. Combs, hospital commander. This is an opportunity for physicians who are qualified to fulfill their **military obligations,** the announcement said.

The hospital is a 400-bed semi-mobile hospital with headquarters in San Francisco. It is one of two such hospitals of the California Army National Guard. Physicians who are qualified are commissioned at the 1st lieutenant level or above, depending on age, length of practice, etc. General medicine and surgery billets are open, as well as the full range of the sub-specialties.

Further information may be obtained from the hospital, LOmbard 4-7715.

* * *

Dr. Ernest Jawaetz, professor of microbiology, University of California Medical Center, San Francisco, was elected president of the **Western Society for Clinical Research** during the meeting at Carmel in January.

* * *

The annual convention of the **National Geriatrics Society** will be held May 1 to 4, 1961, in the St. Francis Hotel, San Francisco.

* * *

Doctor L. Henry Garland, clinical professor of radiology, University of California Medical School, San Francisco, and consultant to the Cancer Research unit there, was elected president of the **American College of Radiology,** at its recent annual meeting in Chicago.

GENERAL

Appearing at the annual convention of **California Medical Assistants Association,** to be held April 15 and 16 at the Hacienda in Bakersfield, will be Dr. E. Vincent Askey, president of the American Medical Association. Dr. Ralph E. Reiner of Fresno will speak on the subject "The Medical Assistant." Dr. Steward Smith of San Diego takes the topic "This Is Your Life." Further information regarding the convention may be obtained from the executive office of the Medical Assistants Association, 693 Sutter Street, San Francisco 2.

* * *

The editors of *Modern Medical Monographs* announce the 1961 **competition for unpublished manuscripts** written by graduate physicians less than 40 years of age, on clinical subjects in the field of internal medicine. The purpose of these annual awards is to stimulate young physicians to communicate their work in the classical form of the monograph and to achieve high standards of medical writing.

The first prize is $500. In addition, the authors of other top-ranking manuscripts which are found suitable will be offered a contract for publication of their work as a book in the series *Modern Medical Monographs* under standard royalty arrangements.

Rules of the competition may be obtained from Dr. Irving S. Wright, 450 East 69th Street, New York 21.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Management of Pain by Therapeutic Nerve Blocks—Harbor Hospital. Friday through Sunday, April 7 through 9. Eighteen hours. Fee: $55.00 (includes two luncheons).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through 28. Thirty-two hours. Fee: $200.00.

Management of Trauma—Harbor Hospital. Friday and Saturday. May 19 and 20. Nine hours.*

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Dermatology in Clinical Practice. Tuesday, July 11. Six hours. Fee: $20.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday. July 16 through 19. University Conference Center. Lake Arrowhead.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Endocrinology. Friday and Saturday, August 4 and 5.†

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Evening Lecture Series in Medicine. Eden Hospital. Tuesday evenings, April 4 through May 23.†

Laboratory Investigation of Endocrine Disorders. Friday through Sunday, April 7 through 9. Twenty-one hours.*

General Surgery. Thursday and Friday, April 20 and 21. Fourteen hours.*

Ear-Nose-Throat. Thursday through Saturday, May 11 through 13. Twenty-one hours.*

Proctology. Thursday and Friday, May 18 and 19. Fourteen hours.*

Water, Salts and Steroids. Thursday through Saturday, May 25-27. Twenty-one hours.*

A Course in Ophthalmology. Thursday through Saturday, June 1-3. Twenty-one hours.*

Electrocardiography. Friday and Saturday, June 9 and 10. Fourteen hours.*

A Course in Psychiatry for Physicians in General Practice. Thursday through Saturday, June 15-17. Twenty-one hours.*

Cerebral Palsy. Thursday and Friday, June 29 and 30. Fourteen hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Note:
Each one of the conferences listed above........................ $ 25.00

General Review Course for Practicing Physicians. Thursday through Saturday. March 16 through 18. Fees: Entire Course $35.00; two days $25.00; one day $15.00.

Conference on Strabismus. Wednesday through Friday. July 26 through 28. Limited enrollment. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center. Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Ward Walks in Rare Diseases. Thursday evenings, May 4 to July 6, 7:30-9:30 p.m. Los Angeles County Hospital. Limited enrollment. Tuition: $100.00.

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

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*Fee to be announced.
†Hours and fees to be announced.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations):

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only):

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION ANNUAL SESSION POSTGRADUATE COURSES

Clinical Neurology in cooperation with College of Medical Evangelists. White Memorial Hospital. Sunday, April 30, 9-12 a.m.; Monday and Tuesday, May 1 and 2, 2-5 p.m. Fee: $25.00.*

Office Gynecology in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Use and Limitations of Laboratory Tests in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Cardiac Resuscitation: in cooperation with USC School of Medicine. USC Research Building, Room 211, 2025 Zonal Avenue, Los Angeles 33. Section I: Saturday, April 29, 9 to 11 a.m.; Section II: Sunday, April 30, 2-4 p.m. (each Section is all-inclusive). Each Section is limited to 15 registrants from areas other than Los Angeles and San Francisco. Fee: $30.00, each Section.*

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*Chartered buses for Registrants will leave the Ambassador Hotel at 8:00 a.m. each morning.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1961

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 14 and 15, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* J. Malcolm Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 30 and July 1, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

* * *

AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

MARCH MEETINGS

PIONEERS MEMORIAL HOSPITAL 11th Annual Medical and Surgical Postgraduate Assembly. March 17 and 18. Pioneers Memorial Hospital, Brawley. *Contact:* George C. Holleran, M.D., program chairman, P. O. Box 159, Brawley.

ST. JOSEPH'S HOSPITAL Second Annual Medical Assembly. March 24 and 25, St. Joseph's Hospital Auditorium, 501 South Buena Vista St., Burbank. *Contact:* Reuben Straus, M.D., chairman, program committee, St. Joseph's Hospital, 501 S. Buena Vista St., Burbank.

THIRD ANNUAL CANCER SEMINAR presented by the American Cancer Society, Nevada Division, Inc., Reno. To be held at the Riverside Hotel Garden Room, Reno, March 28 to 30. *Contact:* American Cancer Society, Nevada Division, Inc., 101 W. Arroyo Street, Reno, Nevada.

FIFTH ANNUAL POSTGRADUATE SYMPOSIUM ON HEART DISEASE sponsored by San Mateo and Santa Clara County Heart Associations, March 29, Veterans' Administration Hospital, 3801 Junipero Serra Blvd., Palo Alto, 9:00 a.m. to 5:30 p.m. *Contact:* John S. Blum, executive director, San Mateo County Heart Association, 45 North B Street, San Mateo, or Mr. William Allayaud, executive director, Santa Clara Heart Association, 461 Porter Building, San Jose.

APRIL MEETINGS

INDUSTRIAL MEDICAL ASSOCIATION. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

FOURTH ANNUAL PALO ALTO CLINIC SYMPOSIUM sponsored by the Clinic and the Palo Alto Medical Research Foundation, April 15, 300 Homer Avenue, Palo Alto. *Contact:* John F. Weigen, M.D., program chairman, Palo Alto Clinic, 300 Homer Avenue, Palo Alto.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY ANNUAL MEETING. April 30-May 4. Riviera Hotel, Palm Springs. *Contact:* Al Miller, M.D., Secretary, 500 South Lucas Ave., Los Angeles 17.

MAY MEETINGS

LOS ANGELES COUNTY HEART ASSOCIATION Annual Meeting, May 3, 12:00 noon to 2:00 p.m. Pacific Ballroom, Statler Hilton Hotel, Los Angeles. *Contact:* Mrs. Sally Smalley, Public Information Director, 2405 W. 8th Street, Los Angeles 57.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS Semi-Annual Meeting, May 4 and 5, Los Angeles. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

HAWAII MEDICAL ASSOCIATION ANNUAL MEETING. May 4-7. Honolulu, Hawaii. *Contact:* Lee McCaslin, Executive Secretary, 510 So. Beretania, Honolulu 13.

LONG BEACH SURGICAL SOCIETY, Fourth Annual Clinic Day. May 10. The Virginia Country Club, 4602 Virginia Road, Long Beach. *Contact:* Robert T. Fox, M.D., secretary, 3712 Atlantic Avenue, Long Beach 7.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS (for members and invited guests). May 10-12. Del Monte Lodge, Pebble Beach. *Contact:* William J. Engel, M.D., Secretary-Treasurer, Cleveland Clinic, 2020 E. 93rd St., Cleveland 6, Ohio.

NEVADA CHAPTER AMERICAN ACADEMY OF GENERAL PRACTICE. May 18-20, Riverside Hotel, Reno, Nevada. *Contact:* John M. Watson, Secretary, 1845 Prater Way, Sparks, Nevada.

MEDICAL STAFF OF CHILDREN'S HOSPITAL OF THE EAST BAY Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

CALIFORNIA HEART ASSOCIATION Annual Meeting and Scientific Session. May 19 through 21, Disneyland Hotel, Anaheim. *Contact:* J. Keith Thwaites, Exec. Director 1370 Mission Street, San Francisco.

AMERICAN ORTHOPAEDIC ASSOCIATION (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

AMERICAN UROLOGICAL ASSOCIATION, INC. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

MEMORIAL HOSPITAL OF LONG BEACH, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

SUMMER AND FALL MEETINGS

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

NEVADA STATE MEDICAL ASSOCIATION 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23-26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

ST. JOHN'S HOSPITAL Postgraduate Assembly. September 14 through 16. St. John's Hospital, 1328 22nd St., Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Convention. September 17-20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting. September 29 through October 1. Hotel del Coronado, Coronado. *Contact:* Philip L. Pillsbury, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

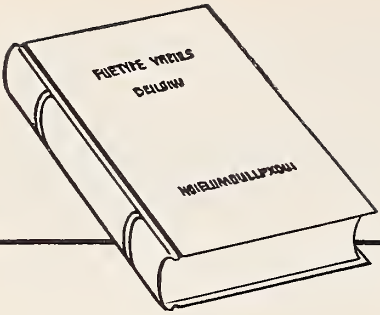
WESTERN INDUSTRIAL MEDICAL ASSOCIATION Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

LOS ANGELES COUNTY HEART ASSOCIATION Professional Symposium. October 11-12. 9 a.m.—5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 1961 Scientific Assembly. October 15-18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, INC., October 22 to 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

AMERICAN COLLEGE OF CHEST PHYSICIANS Seventh Annual Postgraduate Course on Diseases of the Chest, December 4 to 8, 9 to 5 daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.



THE PHYSICIAN'S *Bookshelf*

FUNDAMENTALS OF CHEST ROENTGENOLOGY—Benjamin Felson, M.D., Professor and Director, Department of Radiology, University of Cincinnati College of Medicine; Director, Departments of Radiology, Cincinnati General, Children's, Daniel Drake, Dunham, Christian R. Holmes, and Longview Hospitals; and Special Consultant, United States Public Health Service. W. B. Saunders Company, Philadelphia, 1960. 301 pages, with 450 illustrations on 238 figures, $10.00.

This book consists of a series of ten chapters dealing with the roentgen examination of the chest and the author's experience with mass survey work during World War II.

The sections on orderly roentgen examination and the localization of intrathoracic lesions are commendable. However, in extolling laminography, it would be useful if the author mentioned some simple means of differentiating bullae from cavities, and normal bronchi from ectatic ones.

The various anatomic entities, lobes, segments, hila, pleura and diaphragm are separately considered. (It is hoped that an international commission will decide on hil*a* versus hil*i* at an early date.)

Figure 163 is labelled "middle lobe syndrome." The author of this misleading term has long since withdrawn it from the literature, so perhaps it would be simpler to use the word "middle lobe bronchial stenosis."

Figure 211 illustrates the overlap shadow of the heart in right lower lobe collapse. It should be added that simple elevation of the right hemidiaphragm (both congenital and acquired) may result in a similar misleading appearance of interlobar fluid.

The wisdom of giving specific names to minor findings reflects an attitude more Bostonian than scientific. For example, on page 252, the "vallecular sign" is described, without mentioning the fact that simple retention of barium water in the valleculae and pyriform sinuses is often a normal momentary phenomenon.

Specific normal variations in an extensive series of apparently negative chest roentgenograms are well described in the final chapter. The illustrations are good and the text clear. Recommended for students.

* * *

YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (1960-1961 Year Book Series)—Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., F.I.C.S. (Honorary) Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital; and Senior Attending Obstetrician and Gynecologist, Michael Reese Hospital. The Year Book Publishers, Incorporated, 200 East Illinois Street, Chicago 11, Ill., 1960. 576 pages, $8.00.

This publication has appeared each year since 1900, initially as separate volumes for obstetrics and for gynecology, but as a single volume since 1918. The present editor has been associated with the Year Book since 1923, first assisting the late Joseph B. DeLee with the obstetric section, then as editor of the section on gynecology, and finally as editor of the entire volume during the last eighteen years. It seems likely that the interesting history of the various Year Books, and of this one in particular, is not known to large numbers of younger obstetricians and gynecologists who have entered the specialty since the end of World War II, and one would hope that the editor and publishers would consider providing a brief historical sketch in next year's issue. Nothing of this sort has been attempted since the 1940 edition.

It would be of interest also to have some prefatory remarks on the preparation of the volume—what journals are chosen for abstracting and why, what determines acceptance or rejection of an article, why some abstracts are followed by pages of fine print consisting of additional shorter abstracts that quite often have precious little to do with the major item they appear to be elaborating upon. They seem to be orphaned items that can't conveniently be abandoned, so they're tossed in to decorate the editorial comment, but all too often they represent the editorial effort in its entirety. One wonders why these hard-to-read sub-abstracts are always signed "—Ed." while those in larger type are anonymous.

Despite these criticisms the Year Book continues to be a useful compendium of current literature and its obvious popularity over sixty years is well deserved. Most purchasers of previous editions undoubtedly have already been afforded a look at the 1960-61 issue, thanks to the diligent efforts of the publishers, and those who are not acquainted with the book should treat themselves to a view of the vast array of fact and fantasy crammed into these 575 pages.

Chas. E. McLennan, M.D.

* * *

CARE OF THE WELL BABY—Medical Management of the Child from Birth to 2 Years of Age—Kenneth S. Shepard, M.D., Director of Well Baby Clinics, Northwestern University School of Medicine; Staff Examiner, Infant Welfare Society, Evanston; Pediatrician, Evanston Hospital Association and St. Francis Hospital, Evanston; American Board of Pediatrics. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1960. 224 pages, $3.25.

This small paper-back book is a treatise in a very abbreviated form concerning the management of new born infants up to two years of age. Emphasis is given to the psychological and emotional relationship that should exist between the pediatrician and the mother; the father being almost being completely ignored in this book.

The whole is an expression of the technique developed by the author in his experience in dealing with this age group. It cannot be said that all the views expressed are those of pediatricians generally. There are many areas where disagreement might be found.

This book would not change the methods of practice in a well established pediatrician. It would be of some value to a young pediatrician just entering private practice in helping him to establish his own methods and patterns of practice.

APPLICATION FOR HOUSING ACCOMMODATIONS

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association,** April 30*-May 3, 1961, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, your chance of securing accommodations of your choice will be better if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

Ninetieth Annual Session

CALIFORNIA MEDICAL ASSOCIATION

Los Angeles, California

APRIL 30*-MAY 3, 1961

HOTEL ROOM RATES†

	Single	Twin Beds	Suites
AMBASSADOR HOTEL			
3400 Wilshire Boulevard			
Main Building	14.00-24.00	18.00-28.00	40.00-58.00
Garden Studios	22.00-34.00	24.00-36.00	54.00-66.00
CHAPMAN PARK HOTEL			
3405 Wilshire Boulevard	10.00-11.00	14.00-16.00	20.00-28.00
Bungalows		18.00	25.00-28.00
THE GAYLORD HOTEL			
3355 Wilshire Boulevard	9.00-10.00	12.00-15.00	Single: 25.00 Double: 35.00
HOTEL CHANCELLOR			
3191 West Seventh Street	8.00-10.00	12.00	
SHERATON-WEST (formerly Sheraton-Town House)			
2961 Wilshire Boulevard	12.50-20.00	17.50	34.00

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1961

***April 29: House of Delegates will start with afternoon meeting Saturday, April 29.**

†The above quoted rates are existing rates but are subject to any change which may be made in the future.

- -

CALIFORNIA MEDICAL ASSOCIATION—Dept. 74
693 Sutter Street
San Francisco 2, California

Please reserve the following accommodations for the 90th Annual Session of the California Medical Association, in Los Angeles April 30-May 3, 1961. (House of Delegates members: First meeting of House begins Saturday afternoon, April 29.)

Single Room $.................................... Twin-Bedded Room $....................................

Small Suite $.................................... Large Suite $.................................... Other Type of Room $....................

First Choice Hotel.. Second Choice Hotel..

ARRIVING AT HOTEL (date):..Hour:..............A.M..............P.M.

Leaving (date) ....Hour:..............A.M..............P.M.

Hotel reservations will be held until 6:00 p.m., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of both persons for each twin-bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

Individual Requesting Reservations—Please print or type

Officer?.................. Delegate?.................. Alternate?..................

Name..

County..

Address..

City and State..

COMMISSION ON CANCER
CALIFORNIA MEDICAL ASSOCIATION

PRE-CONVENTION CONFERENCES

LOS ANGELES • SATURDAY, APRIL 29

Radiology

Grove Lounge, Ambassador Hotel

Chairman............................D. J. Sayles, M.D., San Diego
Secretary........................John Heald, M.D., San Francisco

THERAPY SESSION—9:30 a.m. to 11:30 a.m.

Cases with specific therapy problems will be presented. The audience is asked to participate actively.

DIAGNOSTIC SESSION—2:00 p.m. to 4:00 p.m.

Diagnostic cases with histories and films will be presented. Cases have been selected to illustrate specific problems in the radiological and clinical diagnosis of cancer. Audience participation and discussion are urgently requested.

Pathology

9:00 a.m. to noon • 2:00 p.m. to 4:30 p.m.

East and West Venetian Rooms, Ambassador Hotel

Moderators: Robert Mowry, M.D., Birmingham, Alabama, by invitation.
Perry Melnick, M.D., Los Angeles.

This Pre-Convention Conference on Histochemistry will be conducted under the chairmanship of Frank R. Dutra, M.D., Castro Valley.

Members who wish to attend this conference are requested to register now with Weldon K. Bullock, M.D., Registrar, Tumor Tissue Registry, C.M.A. Cancer Commission, Los Angeles County Hospital, 1200 North State Street, Los Angeles 33.

4:45 p.m.

Semi-annual Meeting of California Society of Pathologists—Henry Moon, M.D., San Francisco, presiding.

7:00 p.m.

Dinner meeting of the California Society of Pathologists.

CALIFORNIA
MEDICAL
ASSOCIATION

Scientific Sessions

•

Postgraduate Courses

•

Meetings of the
House of Delegates

•

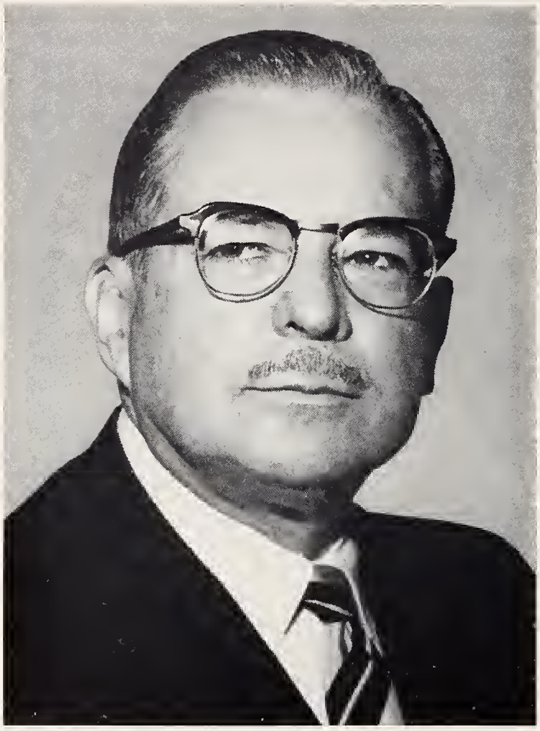
Annual Reports

90th
Annual Session

Ambassador Hotel

LOS ANGELES

April 30 to May 3, 1961



PAUL D. FOSTER
President

WARREN L. BOSTICK
President-Elect

Scientific Program

CALIFORNIA MEDICAL ASSOCIATION

Ninetieth
Annual Session

Ambassador Hotel
LOS ANGELES
APRIL 30 to MAY 3*
1961

*House of Delegates
Opening Meeting
April 29
3:00 p.m.

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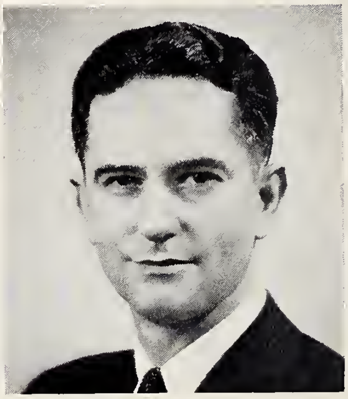
Guest Speakers

EARL P. BENDITT

IRWIN NYDICK

HENRY TUMEN



RUPERT B. TURNBULL, JR.

RALPH VEENEMA

Guest Speakers

Earl P. Benditt, M.D., Seattle—Professor and Chairman of the Department of Pathology, University of Washington School of Medicine.

Irwin Nydick, M.D., New York City—Assistant Clinical Professor of Medicine, Cornell University Medical College, Research Associate, Sloan-Kettering Institute.

Henry J. Tumen, M.D., Philadelphia—Professor and Chairman of the Department of Medicine, University of Pennsylvania Graduate School of Medicine.

Rupert B. Turnbull, Jr., M.D., Cleveland—Department of Surgery, Cleveland Clinic and Cleveland Clinic Foundation.

Ralph Veenema, M.D., New York City—Assistant Professor of Clinical Urology, Columbia University College of Physicians and Surgeons, Chief of Urology Section, Francis Delafield Cancer Research Institute, Columbia Presbyterian Medical Center.

SPECIAL GUESTS OF SECTIONS

Walter Clowers, M.D., Washington, D.C.—Chief of Program Services Branch, Division of Health Mobilization, U. S. Public Health Service.

Virgil S. Counseller, M.D., Phoenix—Emeritus Professor of Surgery, University of Minnesota, Mayo Foundation; Emeritus Surgeon, Mayo Clinic.

Arnold P. Friedman, M.D., New York City—Associate Professor of Clinical Neurology, Columbia University College of Physicians and Surgeons, Physician in Charge, Headache Unit, Montefiore Hospital.

Frank Perlman, M.D., Portland, Oregon—Assistant Clinical Professor of Medicine, University of Oregon Medical School.

Charles L. Schneider, M.D., Ann Arbor, Michigan—Professor of Obstetrics and Physiology, University of Michigan Medical School.

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Information

BADGES. It is important that badges be worn at all times. Admission to scientific meetings is by badge only.

COUNCIL. Frenchette Room. The first meeting of the Council will be held Saturday, April 29 at 9:30 a.m. Further meetings will be held each morning at 7:30 a.m.

DELEGATES. For list of delegates, meeting times, places and agenda, see pages 48 to 53.

EMERGENCY CALLS AND MESSAGES: Convention Emergency Call Number: DUnkirk 1-2191—8:30 a.m. to 5:00 p.m.

MESSAGE CENTER (DUnkirk 1-2191) — *Provided through the courtesy of the Pacific Telephone and Telegraph Company*—Registration Desk, Ballroom, Casino Floor—Open 8:30 a.m. to 5:00 p.m.—The Association will *attempt* to transmit messages to the individual physician. Each physician should notify his own office of the exact times and meetings he plans to attend, and the convention number.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, HUbbard 3-1581.

POSTGRADUATE COURSES. For program, meeting times and places, see pages 34 to 36.

EXHIBITS. Technical Exhibits — Ballroom, Sunset Room and Boulevard Room, Casino Floor. See pages 38 to 46.

Scientific Exhibits—Venetian Room Foyer, South End of Lobby. See list on page 31.

Medical Motion Pictures will be shown in the West Venetian Room. See program synopsis, pages 32 to 33.

You are urged to visit and attend all exhibits.

MEETING TIMES AND PLACES. See chart on page 9 for exact times and places of general and section meetings.

REGISTRATION. Registration and information desks are located in the Ballroom Foyer, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration, except for Postgraduate Courses. Registration desks are open Saturday through Wednesday. *Admission to the general and section sessions and exhibits areas is by badge only.*

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION. (a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A.; county medical society/association or A.M.A. membership card.) (b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.) (c) Medical secretaries will be admitted upon presentation of a letter from the physician-employer. (d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer. (e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, dietitians, allied public health personnel, and others will be admitted provided they have proper identification. (f) *All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.*

Other Meetings and Entertainment

• SATURDAY, APRIL 29

C.M.A. HOUSE OF DELEGATES OPENING SESSION —Embassy Room, 3:00 p.m.

C.M.A. Cancer Commission Conferences on Radiology and Pathology—Venetian Rooms, Pathology; Grove Lounge, Radiology; 9:00 a.m. to 4:30 p.m.

California Society of Pathology—Venetian Rooms, Semiannual Meeting, 4:45 p.m.

• SUNDAY, APRIL 30

PRESIDENTS' RECEPTION AND DINNER DANCE —Reception, 7 p.m., Embassy Room; Dinner Dance, Cocoanut Grove, Ambassador Hotel, 8:00 p.m. Formal dress optional. Honoring the Presidents of the California Medical Association and the Woman's Auxiliary. Tickets on sale in the Main Floor Lobby.

C.M.A. Section on Allergy and California Society of Allergy Luncheon—Oval Room A, 12:30 p.m.

C.M.A. Section on Allergy and California Society of Allergy Reception and Dinner—Reception at 7:00 p.m., Embassy Room; Dinner Dance at 8:00, Cocoanut Grove (Joining C.M.A. Presidents' Reception and Dinner Dance).

C.M.A. Section on Orthopedics Luncheon—Colonial Room, 12:30 p.m.

• MONDAY, MAY 1

A.M.A. Delegates Meeting—Lido Room, 2:30 p.m.

Past Presidents' Luncheon—Oval Room A, noon.

Bureau of Medical Economics Meeting—Oval Room C, 9:00 a.m. to 4 p.m.

C.M.A. ANNUAL MEETING—1961 SCIENTIFIC SESSIONS

LOCATION AMBASSADOR HOTEL (Lobby Floor)	SUNDAY APRIL 30		MONDAY MAY 1		TUESDAY MAY 2		WEDNESDAY MAY 3	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Embassy Room	**9:30 a.m.†** **House of Delegates** †See note below for Opening Session	**2 p.m.** General Meeting Inflammatory Diseases of the Colon	**9 a.m.** General Meeting Diagnostic Methods of Gastroenterology		**9 a.m.** General Meeting Five Guests Five Topics	**4:00 p.m.** **House of Delegates**	**9:30 a.m.** **House of Delegates**	
West Venetian Room	**9 a.m.** Internal Medicine	**2 p.m. & 8 p.m.** Film Symposium	**9 a.m.** Film Symposium	**2 p.m. & 8 p.m.** Film Symposia	**9 a.m.** Film Symposium	**2 p.m. & 8 p.m.** Film Sympasia	**9 a.m.** Film Symposium	**2 p.m.** Film Symposium
East Venetian Room	**9 a.m.** Pathology					**2 p.m.** Industrial Medicine Physical Medicine General Practice		**2 p.m.** Public Health
Regency Room	**9 a.m.** Obstetrics and Gynecology	**2 p.m.** Eye Anesthesiology		**2 p.m.** Anesthesiology		**2 p.m.** Obstetrics and Gynecology Anesthesiology	**9 a.m.** Neurology	**2 p.m.** Psychiatry
Grove Lounge	**9 a.m.** Dermatology	**2 p.m.** Ear, Nose, Throat					**9 a.m.** Urology	**2 p.m.** Urology
Lido Room	**9 a.m.** Radiology	**2 p.m.** Radiology			**9 a.m.** Physical Medicine			**2 p.m.** Internal Medicine
Colonial Room	**9 a.m.** General Surgery					**2 p.m.** Disaster Medical Care		
Rose Room	**9 a.m.** Orthopedics							
(Casino Floor) Oval Room A	**9 a.m.** Allergy	**12:30 p.m.** Allergy Luncheon and Business Meeting						**2 p.m.** Pediatrics
WHITE MEMORIAL HOSPITAL	**9 a.m.*** **(Bus at 8 a.m.*)** Postgraduate Course C.M.E.			**2 p.m.** Postgraduate Course C.M.E.		**2 p.m.** Postgraduate Course C.M.E.		
L. A. COUNTY HOSPITAL **USC SCHOOL OF MEDICINE** (Starts Saturday)	**9 a.m.*** **(Bus at 8 a.m.*)** Postgraduate Course U.S.C.	**2 p.m.** P.G. Course—Cardiac Resuscitation—U.S.C.						

*Buses will leave Ambassador Hotel, Wilshire Entrance.
U.S.C. Courses will start on Saturday.
†**Opening meeting, House of Delegates, 3:00 p.m., Saturday, April 29.**

TECHNICAL EXHIBITS—Sunset Room, Ballroom and Boulevard Room, Casino Floor.
SCIENTIFIC EXHIBITS—Venetian Room Foyer.
COUNCIL OF THE C.M.A. MEETS DAILY AT 7:30 A.M. IN THE FRENCHETTE ROOM.

SCIENTIFIC SESSIONS

GENERAL MEETINGS

FIRST GENERAL MEETING

SUNDAY, APRIL 30

2:00—Embassy Room, Lobby Floor

Symposium

Inflammatory Diseases of the Large Bowel

Moderator: Philip R. Westdahl, M.D., San Francisco
Chairman of Section on General Surgery

Panelists: Sherman Mellinkoff, M.D., Professor of Medicine, University of California at Los Angeles.

Walter L. Stilson, M.D., Professor of Radiology, College of Medical Evangelists, Los Angeles.

Henry J. Tumen, M.D., Professor and Chairman of the Department of Medicine, University of Pennsylvania Graduate School of Medicine, Philadelphia.

Rupert B. Turnbull, Jr., M.D., Staff, General Surgery, Cleveland Clinic and Cleveland Clinic Foundation.

Each speaker will talk primarily on Chronic Ulcerative Colitis as related to his field, to be followed by a question and answer period. Members of the audience are strongly urged to submit questions to the panel.

SECOND GENERAL MEETING

MONDAY, MAY 1

9:00—Embassy Room, Lobby Floor

Symposium

Newer Diagnostic Methods in Gastroenterology

Moderator: Charles D. Armstrong, M.D., Menlo Park
Chairman, Section on Internal Medicine

Panelists: Earl P. Benditt, M.D., Professor and Chairman of the Department of Pathology, University of Washington School of Medicine, Seattle.

John V. Carbone, M.D., Associate Professor of Medicine, University of California School of Medicine, San Francisco.

Bernard J. Haverback, M.D., Assistant Professor of Medicine and Head of Gastrointestinal Section, University of Southern California School of Medicine, Los Angeles.

Irwin Nydick, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York City.

Henry J. Tumen, M.D., Professor and Chairman of the Department of Medicine, University of Pennsylvania Graduate School of Medicine, Philadelphia.

Members of the audience are requested to submit questions to the panel.

12:00—Embassy Room Foyer, Lobby Floor

Luncheon Meeting

Question and Answer Period on Diagnostic Methods in Gastroenterology

Luncheon Tickets must be purchased in advance.

See page 11 for ticket information.

THIRD GENERAL MEETING

TUESDAY, MAY 2

9:00—Embassy Room, Lobby Floor

Moderator: Charles D. Armstrong, M.D., Menlo Park

9:00—**Fine Structure and Histochemistry of Some Renal and Vascular Lesions**—Earl P. Benditt, M.D., Seattle, by invitation.

9:30—**Thrombolytic Therapy of Coronary Thrombosis and Myocardial Infarction**—Irwin Nydick, M.D., New York City, by invitation.

10:00—**Diagnostic Approach to Ulcerating Gastric Lesions**—Henry J. Tumen, M.D., Philadelphia, by invitation.

10:30—**Parathyroid Tumors—Intermittent Function, A Pitfall in Diagnosis**—Ralph J. Veenema, M.D., New York City, by invitation.

11:00—**Pharmacological Approach to the Treatment of Headache**—Arnold P. Friedman, M.D., New York City, by invitation.

11:30—**Postoperative Staphylococcal Diarrhea**—Rupert B. Turnbull, M.D., Cleveland, by invitation.

SPECIAL MEETING

TUESDAY, MAY 2

2:00—Colonial Room, Lobby Floor

Symposium

Disaster Medical Care

General Chairman: Justin J. Stein, M.D., Los Angeles
Presiding: Charles C. Henderson, M.D., San Mateo

2:00—**Address of Welcome**—Paul D. Foster, M.D., President, California Medical Association, Los Angeles.

2:10—**The State Medical Association and Disaster Medical Care**—Charles C. Henderson, M.D., Member, C.M.A. Disaster Medical Care Committee, San Mateo.

2:25—**The National Disaster Medical Care Program of the U. S. Public Health Service**—Walter Clowers, M.D., by invitation, Chief of Program Services Branch, Division of Health Mobilization, USPHS, Washington, D. C.

2:55—**The Council on National Security of the American Medical Association: Its Role in Disaster Medical Care**—Frank F. Schade, M.D., Member, Council on National Security, A.M.A., Los Angeles.

3:15—**Present and Future Plans for Disaster Care in California**—Allan K. Jonas, by invitation, Director, State of California Disaster Office, Sacramento.

3:35—**The Medical Disaster Care Program of the California Disaster Office**—Cecil H. Coggins, M.D., by invitation, Chief, Medical and Health Division, State of California Disaster Office, Sacramento.

3:55—**Intermission.**

4:05—**The Use of Armed Forces Reserve Personnel in Civilian Disaster Medical Care**—Lt. Col. Willard James, MSC, USA, by invitation, Deputy Chief of Operations, Medical Section, 6th Army, San Francisco.

4:25—**The Basic Hospital Disaster Plan**—Wayne P. Chesbro, M.D., Member, C.M.A. Disaster Medical Care Committee, Berkeley.

4:45— **Panel Discussion**

The Value of Test Exercises in Disaster Preparation

Moderator: Wayne P. Chesbro, M.D., Berkeley

Members of the Panel: Robert Range, M.D., Sacramento; Frank F. Schade, M.D., Los Angeles; Donald E. Barker, M.D., Van Nuys; John S. Chain, M.D., Eureka; William J. Kennedy, M.D., Oakland.

Keep on TALKING
And LISTENING
And EAT, *too*

at the

SECOND GENERAL MEETING

MONDAY MORNING, MAY 1

Symposium on
Newer Diagnostic Methods of
Gastroenterology

The panel will consist of so many outstanding discussants that . . . . the question and answer period will carry over into the lunch hour . . . . so . . . . arrangements have been made for a

Special Luncheon

at which members of the audience who wish to may stay for a continued Question and Answer Period.

PRICE:
four dollars and six cents each

No tickets will be sold after April 25, 1961

USE COUPON BELOW FOR ORDERING TICKETS—
MAKE CHECKS PAYABLE TO AMBASSADOR HOTEL

Mr. R. G. Bowman
Annual Session Coordinator
California Medical Association
693 Sutter Street
San Francisco 2, California

YES, I want to attend the luncheon of the General Meeting. Attached is my check for $................ (\$4.06 each)

Please send me....................tickets.

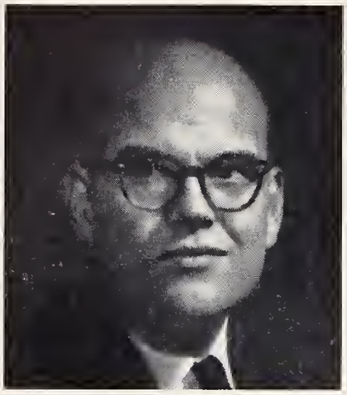
...., M.D.

....
ADDRESS

....
CITY

INTERNAL MEDICINE

Chairman..............Charles D. Armstrong, M.D., Menlo Park
Secretary.................Clifford B. Cherry, M.D., Los Angeles
Assistant Secretary............Glenn A. Pope, M.D., Sacramento



CHARLES D. ARMSTRONG
Chairman

CLIFFORD B. CHERRY
Secretary

SUNDAY, APRIL 30

9:00—West Venetian Room, Lobby Floor

9:00—**Urine Glutamic Oxalacetic Transaminase Activity in Acute Myocardial Infarction**—Robert B. Kalmansohn, M.D., and Richard W. Kalmansohn, M.D., Los Angeles.

The value of urine glutamic oxalacetic transaminase (UGOT) activity in evaluation of patients with myocardial necrosis is outlined.

9:10—**The Sjogren-Mikulicz Syndrome: Its Relationship to Connective Tissue Disorders**—Martin A. Shearn, M.D., Oakland.

The previously poorly understood Sjögren and Mikulicz syndromes, now considered a single combined syndrome, is described, and the likelihood of relationship of the syndrome to others of the collagen group is mentioned.

9:20—**What Is An Adequate Periodic Examination?**—John C. Sharpe, M.D., Beverly Hills.

The experience with complete periodic medical examinations in 500 executives including extensive laboratory, x-ray, and consultative procedures is discussed.

9:30—**Oral Hypoglycemic Agents and the Treatment of Diabetes Mellitus**—William W. H. Pote, Jr., M.D.; Elmer A. Anderson, M.D.; George Barat, M.D., by invitation; and Arthur J. Riesenfeld, M.D., Los Angeles.

The use of tolbutamide, chlorpromide, and DBI in the treatment of diabetes mellitus is outlined, with emphasis on the fact that their use makes more vital the acceptance of the total treatment of diabetes mellitus.

9:40—**The Prevention and Treatment of Postoperative Esophageal Complications**—J. Alfred Rider, M.D., Ph.D., San Francisco.

The prevention of esophagitis and esophageal strictures by selection of proper surgical procedures and the importance of early recognition of symptoms of esophagitis are demonstrated.

9:50—**Chairman's Address: Cytological Studies in the Diagnosis of Gastric Cancer**—Charles D. Armstrong, M.D., Menlo Park.

Description of a simple technique to supplement other methods in the diagnosis of gastric cancer is presented.

10:00—**Malabsorption Syndromes**—Henry J. Tumen, M.D., Philadelphia, by invitation.

Dr. Tumen succeeded Dr. Henry L. Bockus at the University of Pennsylvania Graduate School of Medicine and is well known for his work in a wide range of gastroenterological subjects.

10:30—**An Obscure Hemorrhagic Tendency in Patients with Severe Iron Deficiency Anemia and the Antihemorrhagic Effect of the Repletion of Iron Stores**—Arthur J. Samuels, M.D., Beverly Hills.

An obscure hemorrhagic tendency observed in patients with severe iron deficiency and in which the repletion of iron stores halts the hemorrhagic tendency is described.

10:40—**Business Meeting.**

10:45—**Intermission—Joint Section on Pathology in East Venetian Room.**

11:00—**Serum Enzymes in Disease**—Earl P. Benditt, M.D., Seattle, by invitation.

Dr. Benditt, who came to the University of Washington from the University of Chicago, has done extensive work in studies of gastric cytology, serum enzymes, and mast cells.

11:25—Discussion.

11:30—**Serum Enzyme Patterns as Aids in the Diagnosis of Disease**—Irwin Nydick, M.D., New York City, by invitation.

Dr. Nydick has worked actively at Sloan Kettering Institute in the field of Therapeutic and Diagnostic uses of enzymes.

12:00—**Steroid and Gonadotropic Hormone Patterns in Certain Clinical Disorders**—Gerson Biskind, M.D., San Francisco.

Dr. Biskind is Chief of Pathology at Mt. Zion Hospital and Associate Clinical Professor of Pathology at the University of California School of Medicine.

12:25—Discussion.

12:30—**Automation in the Clinical Laboratory—Demonstration of Techniques by Films**—Thomas V. Feichtmeir, M.D. and Daniel M. Baer, M.D., San Francisco.

Dr. Feichtmeir is Chief of Clinical Pathology and Dr. Baer is a Resident in Pathology at the Veterans Administration Hospital, Ft. Miley, San Francisco.

12:55—Discussion.

SUNDAY, APRIL 30

2:00—Embassy Room, Lobby Floor

First General Meeting

Symposium

Inflammatory Diseases of the Large Bowel

For Program, see General Meetings.

MONDAY, MAY 1

9:00—Embassy Room, Lobby Floor

Second General Meeting

Symposium

Newer Diagnostic Methods in Gastroenterology

For Program, see General Meetings.

TUESDAY, MAY 2

9:00—Embassy Room, Lobby Floor

Third General Meeting

Six guest speakers from out of the state will address the association on subjects of their own specialties.

For Program, see General Meetings.

WEDNESDAY, MAY 3

2:00—Lido Room, Lobby Floor

2:00—**Arteriosclerotic Popliteal Aneurysms—Diagnosis and Management**—S. M. Greenstone, M.D., T. B. Massell, M.D., and E. Craig Heringman, M.D., Los Angeles.

The clinical features of arteriosclerotic popliteal aneurysms are elucidated with emphasis on the availability of successful therapy in order to prevent disastrous complications.

2:10—**The Aggressive Management of Spontaneous Pneumothorax**—Sydney P. Hecker, M.D., and Robert W. Jamplis, M.D., Palo Alto.

Aggressive treatment, to include prompt active measures to quickly re-expand the lung, is shown to shorten the duration of the disability and to minimize complications of spontaneous pneumothorax.

2:20—**The Effect of the Cardiac Arrhythmias on the Circulation of the Vital Organs**—David W. Irving, M.D., Los Angeles, by invitation, Eliot Corday, M.D., Beverly Hills.

The deleterious effects of cardiac arrhythmias on the circulation of the kidney, brain, and gastrointestinal tract have been demonstrated by new techniques.

2:30—**Pseudo-Raynaud's: Cryoglobulinemia Secondary to Occult Neoplasm**—Casimir A. Domz, M.D., and Charles G. Chapman, M.D., Santa Barbara.

Cryoglobulinemia, usually secondary to malignancy, frequently leading to a misdiagnosis of Raynaud's phenomenon can be diagnosed by the simple laboratory determination of cryoglobulin in the serum.

2:40—**Treatment of Advanced Neoplastic Disease with 5-Fluorouracil and Irradiation**—Byron E. Hall, M.D., Ph.D., and James W. Good, M.D., San Francisco.

The value of the pyrimidine antagonist, 5-fluorouracil, in the production of objective improvement in patients with far-advanced cancer is outlined.

3:10—**A Consideration of the Fourth Heart Sound in Clinical Medicine**—John C. Carson, M.D., A. Benchimol, M.D., and E. Grey Dimond, M.D., La Jolla, all by invitation.

The importance of the fourth heart sound, frequently overlooked by the internist, is stressed.

3:20—**Intermission.**

3:30—**Immunological Abnormalities in Lupus Erythematosus**—Halsted R. Holman, M.D., Palo Alto, by invitation.

Dr. Holman was recently named Berthold and Belle N. Guggenhime Professor and Executive of the Department of Medicine, Stanford University, and came to Stanford from the Rockefeller Institute for Medical Research.

4:00—**Differential Diagnosis of Oliguria**—Richards Parker Lyon, M.D., Berkeley.

Criteria for diagnosis in terms of simple bedside methods in differentiation of primary renal disease and renal insufficiency secondary to serious systemic fluid-ion imbalance are outlined.

4:10—**Chromosomal Sex Abnormalities**—Charles P. Miles, M.D., Palo Alto, by invitation.

The paper poses questions in regard to present concepts concerning sex determinants.

4:20—**Aortic Stenosis: Results of So-called Conservative Management**—John Hines Kennedy, M.D., San Diego, by invitation.

The high mortality anticipated in the nonoperative management of aortic stenosis is reaffirmed.

4:30—**Recent Advances in the Treatment of Ulcerative Colitis**—Z. T. Bercovitz, M.D., La Jolla, by invitation.

Recognition of ulcerative colitis as a primary disease above the age of 50 and the use of adrenocorticotropic hormones and adrenocorticosteroids are stressed.

GENERAL SURGERY

Chairman..............Philip R. Westdahl, M.D., San Francisco
Secretary..............William P. Mikkelsen, M.D., Los Angeles
Assistant Secretary.............R. Bruce Henley, M.D., Oakland

PHILIP R. WESTDAHL
Chairman

WILLIAM P. MIKKELSEN
Secretary

SUNDAY, APRIL 30

9:00—Colonial Room, Lobby Floor

9:00— **Seminar**

Recent Advances in the Management of Hypovolemic Shock

9:00—The Dilemma of Vasopressor and Vasodilator Therapy in the Treatment of Hypotension (Shock) — Max Harry Weil, M.D., Ph.D., and Herbert S. Shubin, M.D., Los Angeles.

9:20—Oliguria in the Surgical Patient—Differential Diagnosis and Management—Leonard Rosoff, M.D., Los Angeles.

9:40—The Management of Refractory Hypotension in Surgical Patients—Louis L. Smith, M.D., Los Angeles.

10:00—Intestinal Stomas—Rupert B. Turnbull, Jr., M.D., Cleveland, by invitation.

10:30—Evaluation of Colon Dysfunction—Donald M. Gallagher, M.D., San Francisco.

Discussion—Rupert B. Turnbull, Jr., M.D., Cleveland.

10:55—Transitional Cell Carcinoma of the Rectum and Anus—Lewis Grodsky, M.D., San Francisco.

Discussion—Rupert B. Turnbull, Jr., M.D., Cleveland.

11:15—Aspiration of Breast Cysts—Max R. Gaspar, M.D., Long Beach.

11:30—The Division of Cord Structures in the Management of Inguinal Hernias—John H. Gifford, M.D., and Robert J. Moes, M.D., Los Angeles.

11:45—Business Meeting.

SUNDAY, APRIL 30

2:00—Embassy Room, Lobby Floor

First General Meeting

Symposium

Inflammatory Diseases of the Large Bowel

MONDAY, MAY 1

9:00—Embassy Room, Lobby Floor

Second General Meeting

Symposium

Newer Diagnostic Methods of Gastroenterology

TUESDAY, MAY 2

9:00—Embassy Room, Lobby Floor

Third General Meeting

Six guest speakers from out of the state will address the association on subjects of their own specialties.

For programs, see General Meetings.

GENERAL PRACTICE

Chairman................Floyd K. Anderson, M.D., Los Angeles
Secretary.....................A. J. Franzi, M.D., San Francisco
Assistant Secretary....A. Norton Donaldson, Jr., M.D., Santa Ana

FLOYD K. ANDERSON
Chairman

A. J. FRANZI
Secretary

The Section on General Practice will not conduct a scientific program in order not to conflict with the Postgraduate Courses, the General Meetings, and the Joint Meeting of the Sections on Industrial Medicine and Surgery, General Practice, and Physical Medicine, which this section helped to arrange.

SUNDAY, APRIL 30

2:00—Embassy Room, Lobby Floor

First General Meeting

Symposium

Inflammatory Diseases of the Large Bowel

For Program, see page 10.

MONDAY, MAY 1

9:00—Embassy Room, Lobby Floor

Second General Meeting

Symposium

Newer Diagnostic Methods in Gastroenterology

For Program, see page 10.

TUESDAY, MAY 2

9:00—Embassy Room, Lobby Floor

Third General Meeting

Six guest speakers from out of the state will address the association on subjects of their own specialties.

For Program, see page 10.

TUESDAY, MAY 2

2:00—East Venetian Room, Lobby Floor

Joint Meeting with the Sections on Industrial Medicine and Surgery, and Physical Medicine

Symposium

Traumatic Injuries of the Hand from Various Viewpoints

For Program, See Section on Industrial Medicine and Surgery.

2:00—From the Viewpoint of Soft Tissue Injury—Carl Nemethi, M.D., Los Angeles.
Discussion.

2:25—From the Viewpoint of Orthopedics—Lewis Cozen, M.D., Los Angeles.
Discussion.

2:50—From the Viewpoint of Reconstructive Surgery of the Hand—Herbert H. Stark, M.D., Los Angeles, by invitation.
Discussion.

3:15—From the Viewpoint of Physical Medicine—S. Malvern Dorinson, M.D., San Francisco.
Discussion.

3:40—From the Insurance Company Viewpoint—Mr. John A. Montgomery, Los Angeles, by invitation.
Discussion.

4:05—From the Viewpoint of the Industrial Accident Commission—Mr. Jerry Crowley, Los Angeles, by invitation.
Discussion.

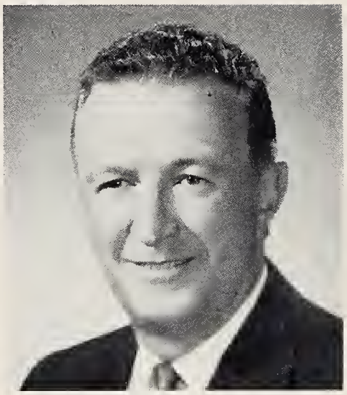
4:30—Rear Portion of East Venetian Room

4:30—Business Meeting and Election of Officers, Section on General Practice.

ALLERGY

Chairman..................Hyman Miller, M.D., Beverly Hills
Secretary..................Gardner S. Stout, M.D., San Mateo
Assistant Secretary........Jerome J. Sievers, M.D., Sherman Oaks

HYMAN MILLER
Chairman



GARDNER S. STOUT
Secretary

SUNDAY, APRIL 30

9:00—Oval Room A, Casino Floor

9:00—**Effect of Hyposensitization on the Development of Allergic Children**—Joseph Rebhun, M.D., Los Angeles.
Discussion.

9:20—**Actifed® in the Treatment of Chronic Conduction Deafness Associated with Perennial Allergic Rhinitis**—Ernest M. Heimlich, M.D., Los Angeles.
Discussion.

9:40—**Vernal Conjunctivitis as an Atopic Disease**—Mathea June Allansmith, M.D., Palo Alto.
Discussion.

10:00—**Allergy to Insect Bites and Stings**—Frank Perlman, M.D., Portland, Oregon, by invitation.
Discussion.

10:20—**Recess.**

10:30—**Patterns of Mortality and Morbidity from Bronchial Asthma in the United States, 1951-1959**—Piero Mustacchi, M.D., San Francisco.
Discussion.

10:50—**Histamine Metabolism**—Gildon N. Beall, M.D., Los Angeles, by invitation.
Discussion.

11:10—**Experiences with Repository-Type Antigens**—John E. Newland, M.D., and A. Zahawi, M.D., Santa Ana.

11:25—**"Single-Injection" Treatment of Allergy, Transfer of Patients from the Multiple Injection Aqueous Type of Extract to the Emulsified Repository Form of Treatment**—Ben C. Eisenberg, M.D., Huntington Park, and Walter R. MacLaren, M.D., Pasadena.
Discussion.

12:00—**Recess.**

12:30—Oval Room A, Casino Floor

12:30—**Luncheon and Business Meeting**—Sponsored jointly by the Section on Allergy and the California Society of Allergy.

7:00—Embassy Room, Lobby Floor

7:00—**Reception before Presidents' Dinner Dance at 8 p.m. in Cocoanut Grove**—The Section on Allergy and the California Society of Allergy will have specially reserved tables. For reservations write Gardner S. Stout, M.D., 39 N. San Mateo Drive, San Mateo. (Tickets $15.00 per person.)

MONDAY, MAY 1

8:00 p.m.—West Venetian Room, Lobby Floor

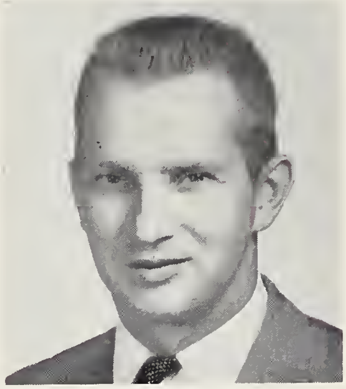
Medical Motion Picture—Symposium on Allergy

VISIT SCIENTIFIC AND TECHNICAL EXHIBITS

ANESTHESIOLOGY

Chairman....................Roger W. Ridley, M.D., Riverside
Secretary....................Gilbert E. Kinyon, M.D., La Jolla
Assistant Secretary.............Grant Fletcher, M.D., Monterey

ROGER W. RIDLEY
Chairman



GILBERT E. KINYON
Secretary

SUNDAY, APRIL 30

2:00—Regency Room, Lobby Floor

Joint Meeting with Section on Eye

For program, see Section on Eye.

MONDAY, MAY 1

2:00—Regency Room, Lobby Floor

2:00—**Closed System Administration of Fluothane**—Grant Fletcher, M.D., Monterey.
Discussion.

2:30—**An Evaluation of the Cheng Needle in Administration of 1,000 Epidural Anesthetics**—Lt. John M. Sheehan, MC, USN, San Diego, by invitation.
Discussion.

3:00—**Postcardiac By-Pass Hypoxia and Acidosis**—Donald A. Walker, M.D., San Francisco.
Discussion.

3:30—**Postoperative Parotitis**—George E. Lewis, M.D. and Paul H. Lorhan, M.D., Torrance.
Discussion.

4:00—**Effects of Anesthetics on Ventilation and PCO_2 During Patient Initiated Assisted Ventilation** (Winner of the California Society of Anesthesiologists' Resident's Award) —Charles P. Larson, Jr., M.D. and E. I. Eger, M.D., by invitation; and J. W. Severinghaus, M.D., San Francisco.

4:30—**Presentation of Resident's Award by California Society of Anesthesiologists. Section Meeting and Election of Officers.**

TUESDAY, MAY 2

2:00—Regency Room, Lobby Floor

Joint Meeting with the Section on Obstetrics and Gynecology

2:00— **Panel Discussion**

Anesthesia for Obstetrics

Moderator: Charles D. Anderson, M.D., Oakland

Members of the Panel:

Earnest F. Gianotti, M.D., San Francisco, Anesthesiologist.

Raymond E. Ponath, M.D., San Diego, Anesthesiologist.

William S. Kroger, M.D., Beverly Hills, Consulting Editor on Hypnosis and Psychosomatic Medicine, *Western Journal of Surgery, Obstetrics and Gynecology.*

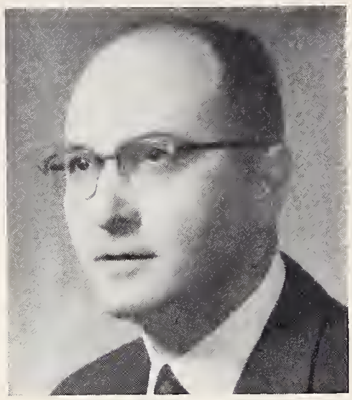
Charles E. Weber, M.D., La Jolla, Obstetrician.

4:30—**Medical Motion Picture: Resuscitation of the Newborn.**

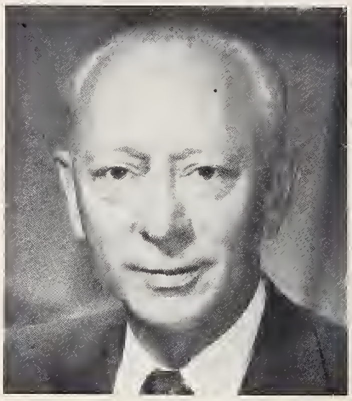
BRING PROPER IDENTIFICATION FOR REGISTRATION

DERMATOLOGY AND SYPHILOLOGY

Chairman..................Eugene M. Farber, M.D., Palo Alto
Secretary..................Paul M. Crossland, M.D., Santa Rosa
Assistant Secretary..........Murray Zimmerman, M.D., Whittier



EUGENE M. FARBER
Chairman



PAUL M. CROSSLAND
Secretary

SUNDAY, APRIL 30

9:00—Grove Lounge, Lobby Floor

9:00—**A New Corticoid for Topical Therapy**—Jud R. Scholtz, M.D., Pasadena.

Discussion: Five minutes.

9:25—**Is Face-Peeling for Wrinkles a Safe and Effective Procedure?**—Samuel Ayres, III, M.D., Los Angeles.

Discussion: Five minutes.

9:50—**The Use of Trimethylpsoralen in Sensitivity Eruptions**—Otto C. Stegmaier, M.D., San Jose, by invitation.

Discussion: Five minutes.

10:15—**Chairman's Address: Variations in the Natural History of Psoriasis**—Eugene M. Farber, M.D., Palo Alto.

10:35—**Recess.**

10:45— **Panel Discussion**

The Diagnosis and Management of Skin Tumors

Moderator: Paul M. Crossland, M.D., Santa Rosa

Members of the Panel: R. R. Allington, M.D., Oakland; Franz Buschke, M.D., San Francisco; Alvin J. Cox, M.D., Palo Alto; Leonard Dobson, M.D., San Francisco; A. Fletcher Hall, M.D., Santa Monica; and Louis H. Winer, M.D., Beverly Hills.

Panel members represent the specialties of pathology, radiology, surgery, chemosurgery, and dermatology. Clinical photos of cases previously unknown to the panel will be shown and a short history of each will be given. Photomicrographs of the histologic features of each tumor will be discussed by the pathologist. Then, various panel members will be asked what form of treatment they would recommend. Finally, the treatment actually given each case will be described, and clinical follow-up pictures will be shown. The audience will be welcome to participate along with panel members.

11:50—**Business Meeting and Election of Officers.**

REGISTRATION

Registration and information desks are located in the Ballroom Foyer, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration except for Postgraduate Courses. Registration desks are open Saturday through Wednesday. *Admission to the general and section sessions and exhibit areas is by badge only.*

EAR, NOSE AND THROAT

Chairman................Heinrich W. Kohlmoos, M.D., Oakland
Secretary....................Marvin W. Simmons, M.D., Fresno
Assistant Secretary...........Henry L. Harris, M.D., Los Angeles

HEINRICH W. KOHLMOOS
Chairman

MARVIN W. SIMMONS
Secretary

SUNDAY, APRIL 30

2:00—Grove Lounge, Lobby Floor

2:00—**Ossifying Fibroma of the Maxillary Sinus**—John Ross, M.D., San Francisco.
Discussion.

2:30—**Experiences Aboard the S.S. Hope in Indonesia**—Bernard M. Kramer, M.D., San Francisco.
Discussion.

3:00—**Inflammatory Blocking Agents: Their Value in Ear, Nose and Throat Diseases**—Bruce A. Sanderson, M.D., San Diego.
Discussion.

3:30—**Changing Concepts in the Indications for Operation in Cancer of the Larynx**—Robert S. Pollack, M.D., San Francisco.
Discussion.

4:00—**Vocal Nodules: A High Speed Photographic Analysis**—Henry J. Rubin, M.D., Beverly Hills.
Discussion.

4:30—**A Study of Tympanic Surgery and Its Results in a Three-Year Period**—Seymour J. Brockman, M.D., Los Angeles.
Discussion.

5:00—**Business Meeting and Election of Officers.**

PRESIDENTS' DINNER DANCE

SUNDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel

Reception, 7 p.m., Embassy Room **Dinner Dance, 8 p.m., Cocoanut Grove**

Formal dress optional

Tickets will be on sale in the Main Lobby

EYE

Chairman....................Earle H. McBain, M.D., San Rafael
Secretary......................Floyd M. Bond, M.D., San Diego
Assistant Secretary......Richard A. Westsmith, M.D., San Mateo

EARLE H. McBAIN
Chairman

FLOYD M. BOND
Secretary

SUNDAY, APRIL 30

2:00—Regency Room, Lobby Floor

Joint Meeting with Section on Anesthesiology

2:00—**A Consideration of Some Pertinent Factors Involved in the Administration of General Anesthesia for Eye Surgery**—Charles P. Coman, M.D., San Diego.

Discussion by Edwin L. Glazener, M.D., San Diego.

2:30—**Local Anesthesia in Ophthalmology**—George L. Tabor, M.D., San Diego.

3:00—**Cancer of the Eyelid Treated by Irradiation**—Robert J. McKenna, M.D., and Ian Macdonald, M.D., Los Angeles.

3:30—**Reopening Technique for Cicatrized Trephination**—Harold F. Whalman, M.D., Los Angeles.

3:45—**Medico-Legal Aspect of Contact Lenses**—J. Myron Middleton, M.D., Beverly Hills.

4:15—**Business Meeting and Election of Officers.**

EMERGENCY CALLS AND MESSAGES

Convention Emergency Call Number: DUnkirk 1-2191—8:30 a.m. to 5:00 p.m.

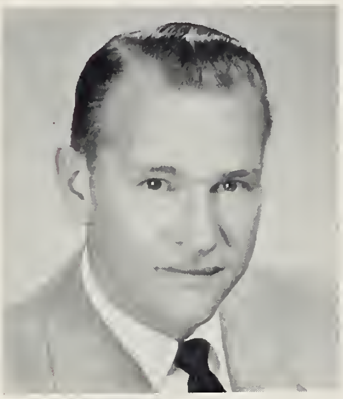
(*Provided through the courtesy of the* Pacific Telephone and Telegraph Company)

Each physician should notify his own secretary regarding the *exact* section he plans to attend and the time of his attendance, and the *convention telephone number*. It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, HUbbard 3-1581.

INDUSTRIAL MEDICINE AND SURGERY

Chairman...............Robert C. Rossberg, M.D., Los Angeles
Secretary............John H. Leimbach, Jr., M.D., San Francisco
Assistant Secretary..........Peter L. Hoffman, M.D., Los Angeles



ROBERT C. ROSSBERG
Chairman

JOHN H. LEIMBACH, JR.
Secretary

TUESDAY, MAY 2

2:00—East Venetian Room, Lobby Floor

Joint Meeting with Sections on General Practice and Physical Medicine

Symposium

Traumatic Injuries of the Hand from Various Viewpoints

2:00—**From the Viewpoint of Soft Tissue Injury**—Carl Nemethi, M.D., Los Angeles.
Discussion.

2:25—**From the Viewpoint of Orthopedics**—Lewis Cozen, M.D., Los Angeles.
Discussion.

2:50—**From the Viewpoint of Reconstructive Surgery of the Hand**—Herbert H. Stark, M.D., Los Angeles.
Discussion.

3:15—**From the Viewpoint of Physical Medicine**—S. Malvern Dorinson, M.D., San Francisco.
Discussion.

3:40—**From the Insurance Company Viewpoint**—Mr. John A. Montgomery, Los Angeles, by invitation.
Discussion.

4:05—**From the Viewpoint of the Industrial Accident Commission**—Mr. Jerry Crowley, Los Angeles, by invitation.
Discussion.

4:30—**Business Meeting and Election of Officers, Section on Industrial Medicine and Surgery.**

PRESIDENTS' DINNER DANCE

SUNDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel

Reception, 7 p.m., Embassy Room **Dinner Dance, 8 p.m., Cocoanut Grove**

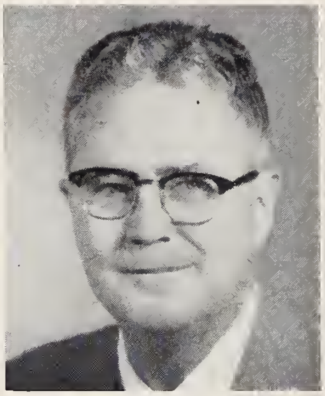
Formal dress optional

Tickets will be on sale in the Main Lobby

OBSTETRICS AND GYNECOLOGY

Chairman...............John C. McDermott, M.D., Los Angeles
Secretary.................Edward F. Healey, M.D., San Rafael
Assistant Secretary........Kenneth Morgan, Jr., M.D., Los Angeles

JOHN C. McDERMOTT
Chairman



EDWARD F. HEALEY
Secretary

SUNDAY, APRIL 30

9:00—Regency Room, Lobby Floor

9:00—**The Use of Intranasal Oxytocin for Milk Let-Down**—Bruce D. Stern, M.D., Beverly Hills.

9:30—**Problems in the Diagnosis of Genital Tuberculosis**—Karl L. Schaupp, Jr., M.D., San Francisco.

10:00—**Myomectomy and Myometrial Reconstruction—A New Technique**—A. R. Abarbanel, M.D., Beverly Hills.

10:30—**Recess.**

10:45—**New Techniques in Pubo-Coccygeous Muscle Exercises**—Arnold H. Kegel, M.D., Los Angeles.

11:15—**Chairman's Address**—John C. McDermott, M.D., Los Angeles, Calif.

11:45—**Business Meeting and Election of Officers.**

TUESDAY, MAY 2

2:00—Regency Room, Lobby Floor

Joint Meeting with the Section on Anesthesiology

2:00— **Panel Discussion**

Anesthesia for Obstetrics

Moderator: Charles D. Anderson, M.D., Oakland

Members of the Panel:

Earnest F. Gianotti, M.D., San Francisco, Anesthesiologist.

Raymond E. Ponath, M.D., San Diego, Anesthesiologist.

William S. Kroger, M.D., Beverly Hills, Consulting Editor on Hypnosis and Psychosomatic Medicine, *Western Journal of Surgery, Obstetrics and Gynecology.*

Charles E. Weber, M.D., La Jolla, Obstetrician.

4:30—**Medical Motion Picture: Resuscitation of the Newborn.**

REGISTRATION

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ORTHOPEDICS

Chairman....................Carl E. Horn, M.D., Sacramento
Secretary......................Bret W. Smart, M.D., Oakland
Assistant Secretary............Albert H. Rodi, M.D., Los Angeles

CARL E. HORN
Chairman

BRET W. SMART
Secretary

SUNDAY, APRIL 30

9:00—Rose Room, Lobby Floor

Symposium

Rehabilitation of the Upper Extremity

9:00—**Surgery in Upper Extremity Amputees**—Robert Mazet, M.D., Los Angeles.

Discussion from the floor.

9:30—**Use of the Flexor Hinge Hand in the Severely Paralyzed—Illustrated by a Medical Motion Picture**—Vernon Nickel, M.D., Los Angeles.

Discussion from the floor.

10:00—**Intermission.**

10:20—**Upper Extremity Function After Spinal Cord Injury—Illustrated by a Medical Motion Picture**—Jacquelin Perry, M.D., Downey.

Discussion from the floor.

10:50—**Functional Bracing of the Upper Extremity**—Edwin R. Schottstaedt, M.D., San Francisco; Margaret V. Magee, R.P.T., and Elizabeth Parrish, R.P.T., San Francisco, by invitation; and George Robinson, Prosthetist, Vallejo, by invitation.

Discussion from the floor.

11:20—**Chairman's Address**—Carl Horn, M.D., Sacramento.

11:50—**Recess.**

12:30—Colonial Room, Lobby Floor

12:30—**Orthopedic Luncheon—Business Meeting and Election of Officers.**

EMERGENCY CALLS AND MESSAGES

Convention Emergency Call Number: DUnkirk 1-2191—8:30 a.m. to 5:00 p.m.

(Provided through the courtesy of the Pacific Telephone and Telegraph Company*)*

Each physician should notify his own secretary regarding the *exact* section he plans to attend and the time of his attendance, and the *convention telephone number.* It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, HUbbard 3-1581.

PATHOLOGY AND BACTERIOLOGY

Chairman....................Robert L. Dennis, M.D., San Jose
Secretary..............George J. Hummer, M.D., Santa Monica
Assistant Secretary...Carl M. McCandless, Jr., M.D., San Francisco

ROBERT L. DENNIS
Chairman

GEORGE J. HUMMER
Secretary

SUNDAY, APRIL 30

9:00—East Venetian Room, Lobby Floor

9:00—**Hemagglutination Technique Applied for the Detection of Hormones and Their Antibodies**—Edward R. Arquilla, M.D., Los Angeles, by invitation.

9:20— Discussion.

9:25—

Symposium

Blood Coagulation Problems from the Standpoints of Clinician and Pathologist

Robert R. Proctor, M.D., Los Angeles; Benjamin G. Fishkin, M.D., Los Angeles, and Donald Bernstein, M.D., Santa Monica, both by invitation.

10:30— Discussion—Irwin Nydick, M.D., New York City, and Alvin Lewis, M.D., San Francisco; followed by general discussion.

10:50—**Intermission.**

Joint Meeting with the Section on Internal Medicine

11:00—**Serum Enzymes in Disease**—Earl Benditt, M.D., Seattle, by invitation.

11:25— Discussion.

11:30—**Serum Enzyme Patterns as Aids in the Diagnosis of Disease**—Irwin Nydick, M.D., New York City, by invitation.

11:55— Discussion.

12:00—**Steroid and Gonadotropin Hormone Patterns in Certain Clinical Disorders**—Gerson R. Biskind, M.D., San Francisco.

12:25— Discussion.

12:30—**Automation in the Clinical Laboratory**—Thomas Feichtmeir, M.D., and Daniel M. Baer, M.D., San Francisco.

12:55—**Business Meeting and Election of Officers.**

BRING PROPER IDENTIFICATION FOR REGISTRATION

PEDIATRICS

Chairman	James L. Dennis, M.D., Oakland
Secretary	Harry O. Ryan, M.D., Pasadena
Assistant Secretary	R. Bruce Jessup, M.D., Palo Alto

JAMES L. DENNIS
Chairman

HARRY O. RYAN
Secretary

WEDNESDAY, MAY 3

2:00—Oval Room A, Casino Floor

2:00—**Newer Concepts in the Management of Tetanus**—Thomas C. Cock, M.D., Berkeley.

2:25—**The Fibrinolytic Enzyme Defect in Hyaline Membrane Disease**—Jack Lieberman, M.D., Long Beach.

2:50—**The Significance of Hypernatremia in Pediatric Practice**—Virginia Y. Blacklidge, M.D., Oakland, by invitation.

3:15—**Recess.**

3:30—**The Use of Thioridazine Hydrochloride (Mellaril®) in the Treatment of Children's Behavior Disorders**—Leon Oettinger, Jr., M.D., San Marino.

3:55—**Perirenal Hematoma in the Newborn**—Victor G. Mikity, M.D., Los Angeles.

4:20—**Chairman's Address: The Thorny Child**—James L. Dennis, M.D., Oakland.

4:45—**Business Meeting.**

PRESIDENTS' DINNER DANCE

SUNDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel

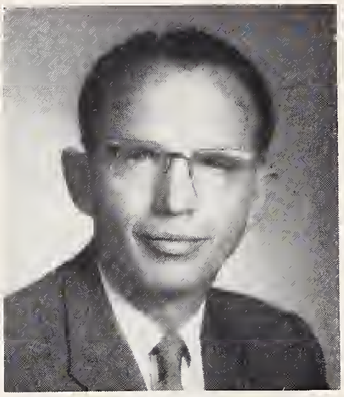
Reception, 7 p.m., Embassy Room **Dinner Dance, 8 p.m., Cocoanut Grove**

Formal dress optional

Tickets will be on sale in the Main Lobby

PHYSICAL MEDICINE

Chairman............Joseph E. Maschmeyer, M.D., Los Angeles
Secretary............S. Malvern Dorinson, M.D., San Francisco
Assistant Secretary...........Karl H. Haase, M.D., Los Angeles



JOSEPH E. MASCHMEYER
Chairman

S. MALVERN DORINSON
Secretary

TUESDAY, MAY 2

9:00—Lido Room, Lobby Floor

9:00—**Introduction**—Joseph E. Maschmeyer, M.D., Chairman, Section on Physical Medicine, Los Angeles.

9:05—**Fasciculation: Electromyograph and Clinical Significance**—Robert V. Miller, Jr., M.D., Beverly Hills.

9:30—**Diagnosis of Low Back Pain**—John McM. Mennell, M.D., Los Angeles, by invitation.

9:55—**Physical Treatment of Low Back Pain**—O. Leonard Huddleston, M.D., Santa Monica.

10:20—**Recess.**

10:30—**Physical Muscle Relaxants**—E. C. Christensen, M.D., Loma Linda.

10:55—**Therapeutic Exercise in General Practice**—Miquel J. Rodriguez, M.D., Los Angeles, by invitation.

11:20—**The Upright Posture in Patients with Involvement of the Spinal Cord**—Roy H. Nyquist, M.D., Long Beach.

11:45—**Business Meeting.**

TUESDAY, MAY 2

2:00—East Venetian Room, Lobby Floor

Joint Meeting with Sections on General Practice and Industrial Medicine

Symposium

Traumatic Injuries of the Hand from Various Viewpoints

2:00—**From the Viewpoint of Soft Tissue Injury**—Carl Nemethi, M.D., Los Angeles.
Discussion.

2:25—**From the Viewpoint of Orthopedics**—Lewis Cozen, M.D., Los Angeles.
Discussion.

2:50—**From the Viewpoint of Reconstructive Surgery of the Hand**—Herbert H. Stark, M.D., Los Angeles.
Discussion.

3:15—**From the Viewpoint of Physical Medicine**—S. Malvern Dorinson, M.D., San Francisco.
Discussion.

3:40—**From the Insurance Company Viewpoint**—Mr. John A. Montgomery, Los Angeles, by invitation.
Discussion.

4:05—**From the Viewpoint of the Industrial Accident Commission**—Mr. Jerry Crowley, Los Angeles, by invitation.
Discussion.

BRING PROPER IDENTIFICATION FOR REGISTRATION

PSYCHIATRY AND NEUROLOGY

Chairman................Leon J. Whitsell, M.D., San Francisco
Secretary.....................Robert E. Wyers, M.D., Norwalk
Assistant Secretary..................Mark Zeifert, M.D., Fresno

LEON J. WHITSELL
Chairman

ROBERT E. WYERS
Secretary

WEDNESDAY, MAY 3

9:00—Regency Room, Lobby Floor

Neurology

9:00—**Correlation of Clinical and Pathological Findings in Cerebral Palsy**—Peter Cohen, M.D., San Francisco.

Discussant: Cyril B. Courville, M.D., Los Angeles.

9:30—**Lobotomy After Sixty-Five**—Walter Freeman, M.D., Ph.D., Los Altos.

Discussant: Richard E. Turk, M.D., Berkeley.

10:00—**Treatment of Bell's Palsy With Prednisone**—Stuart H. Mann, M.D., San Diego, by invitation.

Discussant: Ralph W. Baris, M.D., La Jolla.

10:30—**Mechanisms of Headache, Vascular and Muscular**—Arnold P. Friedman, M.D., New York City, by invitation.

Discussant: J. M. Nielsen, M.D., Los Angeles.

11:00—**Chairman's Address: Neurologic Complications of Diabetes**—Leon J. Whitsell, M.D., San Francisco.

11:30—**Recess.**

11:40—**Business Meeting.**

WEDNESDAY, MAY 3

2:00—Regency Room, Lobby Floor

Psychiatry

2:00—**Effect of D-Amphetamines on Speech Defects in the Mentally Retarded**—Charles H. Fish, M.D., and Evelyn Bowling, Costa Mesa, both by invitation.

Discussant: Ronald Koegler, M.D., Los Angeles.

2:30—**The Psychiatric Management of Intersexed Patients**—Robert J. Stoller, M.D., Los Angeles; and Harold Garfinkel, Ph.D., and Alexander Rosen, Ph.D., Los Angeles, both by invitation.

Discussion.

3:00—**Transference to a Medical Center**—Harry A. Wilmer, M.D., Palo Alto.

Discussion.

3:30—**The Geriatric Mental Patient**—G. E. Wolff, M.D., Camarillo, by invitation.

Discussant: Jerome Kummer, M.D., Santa Monica.

4:00—**Problem of Obscenity and Pornography**—Karl M. Bowman, M.D., San Francisco and Bernice Engle, M.A., San Francisco, by invitation.

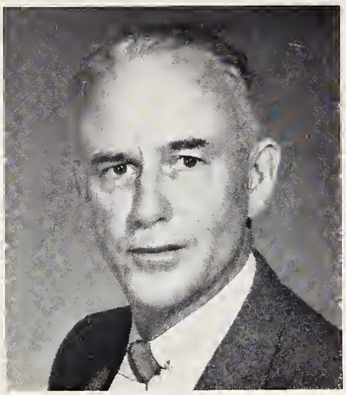
Discussion: Edward Stainbrook, M.D., Los Angeles.

4:30—**The Psychiatric Clinic and the Delinquent Adolescent**—Edward G. Colbert, M.D., Santa Monica.

Discussant: William Glasser, M.D., West Los Angeles.

PUBLIC HEALTH

Chairman . . . . Merle E. Casand, M.D., San Bernardino
Secretary . . . . Ellis D. Sax, M.D., San Francisco
Assistant Secretary . . . . Irving D. Litwack, M.D., Long Beach



MERLE E. COSAND
Chairman

ELLIS D. SOX
Secretary

WEDNESDAY, MAY 3

2:00—East Venetian Room, Lobby Floor

2:00—**Skin Testing in Schools—An Important Part of the Community Case-Finding Program**—Francis J. Curry, M.D., San Francisco.
Discussion.

2:30—**Seat Belts and the Public Health**—Herbert A. Lints, M.D., Escondido.
Discussion.

3:00—**Where Is Public Health Medical Care for Children Going?**—Leslie Corsa, Jr., M.D., Berkeley; and Robert B. Jessup, M.D., Berkeley.
Discussion.

3:30—**Recess.**

3:40—**Medical Team Approach to Alcoholism**—Nicholas J. Khoury, M.D., Los Angeles.
Discussion.

4:10—**Radiation Protection—A Public Health Responsibility**—George M. Uhl, M.D., Los Angeles; and Jack C. Rogers, B.S.C.E., Los Angeles, by invitation.

4:40—**Business Meeting.**

PRESIDENTS' DINNER DANCE

SUNDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel

Reception, 7 p.m., Embassy Room **Dinner Dance, 8 p.m., Cocoanut Grove**

Formal dress optional

Tickets will be on sale in the Main Lobby

RADIOLOGY

Chairman	Frank C. Binkley, M.D., Pasadena
Secretary	John R. Bryan, M.D., San Francisco
Assistant Secretary	Robert L. Scanlan, M.D., Los Angeles

FRANK C. BINKLEY
Chairman

JOHN R. BRYAN
Secretary

SUNDAY, APRIL 30

9:00—Lido Room, Lobby Floor

Diagnostic Radiology

9:00—**Selectivity in the Study of the Cardiovascular System**—Herbert L. Abrams, M.D., Palo Alto, by invitation.
Discussion.

9:25—**Lymphosarcoma of the Colon and Rectum**—John H. Woodruff, Jr., M.D., Los Angeles; and Alan B. Skorneck, M.D., Los Angeles, by invitation.
Discussion.

9:50—**Performing the Barium Enema**—Howard L. Steinbach, M.D., San Francisco.
Discussion.

10:15—**Recess.**

10:25—**Parosteal Osteosarcomata** — Charles P. Schwinn, M.D., and Robert L. Scanlan, M.D., Los Angeles.
Discussion.

10:50—**Arthrography of the Knee**—Saul Heiser, M.D., Los Angeles.
Discussion.

11:15—**The Radiologic Diagnosis of Subfrontal Tumors**—Alfred L. Schmitz, M.D., Los Angeles.
Discussion.

11:40—**Business Meeting and Election of Officers.**

SUNDAY, APRIL 30

2:00—Lido Room, Lobby Floor

Therapeutic Radiology

2:00—**Mediastinal Hodgkin's Disease**—Jerome M. Vaeth, M.D., and Franz J. Buschke, M.D., San Francisco.
Discussion.

2:25—**New Aspects of Dosage Nomenclature and Calculation**—Robert E. Pugh, Jr., Ph.D., Los Angeles, by invitation.
Discussion.

2:30—**Recess—Annual Meeting of Pacific Roentgen Society.**

VISIT SCIENTIFIC AND TECHNICAL EXHIBITS

UROLOGY

Chairman................Morrell E. Vecki, M.D., San Francisco
Secretary........................Sam Peck, M.D., San Diego
Assistant Secretary................Harold Kay, M.D., Oakland

MORRELL E. VECKI
Chairman

SAM PECK
Secretary

WEDNESDAY, MAY 3

9:00—Grove Lounge, Lobby Floor

9:00—Peripelvic Renal Cysts—Miguel A. Llanos, M.D., Los Angeles.

Discussion.

9:15—Excretory Urethrography—An Adjunct in Urologic Diagnosis — Robert O. Pearman, M.D., Encino.

Discussion.

9:30—Does the Catheter-Free State Bear Watching Among the Patients With Spinal Cord Injury? —A. Estin Comarr, M.D., Long Beach.

Discussion by E. Vincent Moore, Jr., M.D., La Mesa.

9:45—Actinomycosis of the Kidney—Harold Kay, M.D., Oakland.

Discussion.

10:00—Intermission.

10:10— **Panel Discussion**

Biopsy of the Prostate

Moderator: Frank J. Hinman, Jr., M.D., San Francisco

10:10—Biopsy of the Prostate—Ralph J. Veenema, M.D., Assistant Professor of Clinical Urology, Columbia University College of Physicians and Surgeons, New York City, by invitation.

10:40—Panel Discussion: When, How, and Under What Circumstances Should the Prostate Be Biopsied?

Panelists: Ralph J. Veenema, M.D., New York City; Roger W. Barnes, M.D., Los Angeles; Robert J. Prentiss, M.D., San Diego; Joseph J. Kaufman, M.D., Los Angeles; Alex L. Finkle, M.D., San Francisco.

12:00—Question and Answer Period.

WEDNESDAY, MAY 3

2:00—Grove Lounge, Lobby Floor

2:00—Carcinoma of Cowper's Gland—Report of the Eleventh Case—Ector LeDuc, M.D., San Diego.

Discussion by Earl F. Nation, M.D., Pasadena.

2:15— **Panel Discussion**

Vesico-Vaginal Fistula

Moderator: Donald A. Charnock, M.D., Los Angeles

2:15—Vesico-Vaginal Fistula—Virgil S. Counseller, M.D., Phoenix, by invitation.

2:25—Panel Discussion.

Panelists: Virgil S. Counseller, M.D., Phoenix; Elmer Belt, M.D., Los Angeles; Henry M. Weyrauch, M.D., San Francisco; John W. Dorsey, M.D., Los Angeles.

3:45—Business Meeting: Chairman's Address and Election of Officers.

3:55—Adjournment to West Venetian Room for Urological Film Symposium.

West Venetian Room, Lobby Floor

4:00—Urological Film Symposium:

1. Undescended Testicle: Surgical Anatomy of the Spermatic Vessels, Spermatic Surgical Triangles, and Lateral Spermatic Ligament —Robert J. Prentiss, M.D., San Diego.
2. The Repair of Vesico-Vaginal Fistula by the Transperitoneal, Transvesical Approach —John W. Dorsey, M.D., Long Beach.
3. Transvaginal Repair of Vesico-Vaginal Fistula—Elmer Belt, M.D., Los Angeles.

Scientific and Organizational Exhibits

SCIENTIFIC EXHIBITS

Venetian Room Foyer, South End of Lobby

Diagnosis and Treatment of Peripheral Arteriosclerosis—Travis Winsor, M.D., Los Angeles.—Through the use of charts and posters, photographs and drawings this exhibit shows the diagnosis and treatment of peripheral vascular disease, using medical and surgical methods.

The Physicians' Roles in a Rehabilitation Program—John C. Wilcox, M.D., Pomona.—A series of four or five cases depicting several aspects of the organization of a medically orientated rehabilitation program. Emphasis is given to the importance of medical direction and participation by the personal physician and the rehabilitation physician in both the organization of a general physical rehabilitation program and the assignment of particular parts in it.

Pathogenesis and Treatment of Ulcerative Colitis—Hypersensitivity Factors—J. Alfred Rider, M.D., San Francisco.—This exhibit consists of drawings, photographs and photomicrographs that describe and illustrate clinical features of ulcerative colitis, etiological factors and experimental data implicating hypersensitivity factors, and treatment of ulcerative colitis.

Stereotaxic Transsphenoidal Yttrium 90 Hypophysectomy—Paul H. Crandall, M.D., Los Angeles.—A display of drawings, roentgenograms, charts and posters, photomicrographs, etc., in two parts, showing a stereotaxic device for implantation of intrasellar radioactive beads. The steps in the procedure are shown. The dosimetry calculations and results in a series of patients are given.

Superficial Chemosurgery in the Treatment of Aging Skin—Samuel Ayres, III, M.D., Los Angeles.—The beneficial effects of the careful application of chemical cauterants to actinically damaged and aging skin is demonstrated by means of posters and photographs.

Forensic Pathology and Primary Intracranial Tumors—Robert W. Huntington, Jr., M.D., Bakersfield.—This exhibit, consisting of charts, posters and photographs is based on cases studied by the offices of the Kern County Coroner and the Kern County Pathologist, in which the solution to a medicolegal problem proved to be a primary intracranial neoplasm. The range of problems included possible and actual trauma, gross behavior disturbance, and mysterious and unattended death. The exhibit outlines the problem in each case, presents the autopsy findings, with gross and microphotographs.

Drugs in Emotional Disorders: Past and Present—Leo E. Hollister, M.D., Palo Alto.—This exhibit is made up of charts and posters to illustrate the aims of drug therapy in the past and present. Examples of agents used during the past twenty years are listed. Charts also show chemical structure of drugs used currently. Present theory is diagrammed and therapeutic results obtained in a hospital are given. Anti-depressants and psychotomimetics agents are mentioned as future agents of therapeutic value.

Check Your Eye-Cue—George K. Kambara, M.D., Los Angeles.—An exhibit containing five faces made out of plaster of paris. The right eye of each face has a fundus photograph or drawing which can be viewed with ophthalmoscope provided on the left hand side. Below the face is a panel which gives the answer of the systemic disease represented. This will be covered and can be opened to get the answer. The two side panels contain transparencies of fundus photographs entitled "Fundus Findings in Systemic Disease Commonly Seen" and "Fundus Findings in Systemic Disease Infrequently Seen."

The Circulation During Hypotension (Shock)—Max H. Weil, M.D., Los Angeles.—A functioning model of the cardiovascular system which simulates the human circulation to illustrate the way in which the flow of blood and blood pressure are maintained. The purpose of this exhibit is to translate the abnormal physiological events that lead to and maintain shock into a mechanical analogy. The relative roles of heart rate, blood pressure, blood flow and blood volume in the causation and progress of shock are demonstrated.

ORGANIZATIONAL EXHIBITS

Committee on Careers in Nursing, California League of Nursing—A Committee representative will be on hand to explain a state-wide program to interest more qualified people in entering accredited schools of nursing, professional and vocational; allied health careers; and graduate nurse career development. A consultant in materials will be available at the Careers booth.

California Medical Association Physician Placement Service — The California Medical Association's Placement Service booth will be distributing "Opportunities" bulletins and other information on how to make the best use of the Placement Service facilities. The Coordinator of the Placement Service will interview persons who have openings or who are looking for opportunities.

California Physicians' Service—Blue Shield—At the California Physicians' Service booth, professional relations representatives will be on hand throughout the meeting to discuss any phase of the C.P.S. operation. Descriptive materials, fee schedules, and other information to physicians' offices will be available for distribution.

MOTION PICTURE PROGRAM

PAUL D. FOSTER, M.D., Chairman

Sunday to Wednesday, April 30 to May 3

WEST VENETIAN ROOM, AMBASSADOR HOTEL

Motion Picture Film Symposiums will be offered daily in the West Venetian Room, Ambassador Hotel. Each Symposium will have a Moderator and a Panel of experts in the field (authors in many cases) to discuss films and answer questions from the audience. Following is a tentative list of films which will be shown on the programs. A separate Motion Picture program with complete listing and description of films will be available at the time of the meeting.

SUNDAY, 2:00-3:45 P.M.

Obstetrics

Moderator: Edward F. Healey, M.D., San Rafael.

Panel: Authors William S. Kroger, M.D., Beverly Hills; Keith P. Russell, M.D., Los Angeles.

Breech Delivery.

Resuscitation of the Newborn.

Modern Obstetrical Management.

Hypnoanesthesia in Obstetrics.

SUNDAY, 3:50-5:30 P.M.

Gynecology

Moderator: Paula Horn, M.D., Los Angeles.

Panel: Authors H. Wright Seiger, M.D., Santa Monica; Earl Hyman, M.D., Beverly Hills; Henry J. Muller, M.D., San Francisco.

Cold Coning of the Uterine Cervix.

Vaginal Hysterectomy.

Schauta Vaginal Hysterectomy.

Investigation of Female Sterility.

SUNDAY, 8:00-10:00 P.M.

Panel: William Mumler, M.D., Los Angeles; Joseph O'Connor, M.D., Pasadena.

Rheumatic Heart Disease.

Chronic Bronchitis.

Bronchial Carcinoma.

MONDAY, 9:00-12:00 NOON

Medicine

Moderator: William H. Grishaw, M.D., Beverly Hills.

Panel: Paul Ewing, M.D., Northridge; Allen T. Hinman, M.D., San Francisco.

Hypertension I (The Regulation of Blood Pressure).

Current Trends in the Clinical Management of Diabetes.

Physical Diagnosis—Communicable Disease.

Early Detection and Medical Management of Ulcerative Colitis.

MONDAY, 2:00-5:00 P.M.

Hernias

Moderator: Samuel R. Sherman, M.D., San Francisco.

Panel: Philip R. Westdahl, M.D., San Francisco; Malcolm C. Todd, M.D., Long Beach.

Recurrence in Inguinal Hernia.

Femoral Hernia.

Inguinal Hernioplasty.

Diaphragmatic Hernia in the Newborn.

Ventral Hernia.

MONDAY, 8:00-10:00 P.M.

Allergy

Moderator: Hyman Miller, M.D., Beverly Hills.

Panel: Willard Small, M.D., Pasadena; Gildon Beall, M.D., Los Angeles.

Clinical Management of Autoimmune Hematologic Disorders.

Anaphylaxis and Allergy.

TUESDAY, 9:00-12:00 NOON

Abdominal Surgery

Moderator: William Quinn, M.D., Los Angeles.

Panel: R. Bruce Henley, M.D., Oakland; David Schmidt, M.D., Los Angeles.

Complications of Acute Appendicitis.

Strangulated Obstruction of the Intestine.

Peritonitis—Some Causes and Management.

The Peritoneum: Reactions to Operative Trauma and Their Control.

Fecal Fistulae Following Appendectomy.

TUESDAY, 2:00-3:30 P.M.

Moderator: Gurth Carpenter, M.D., Beverly Hills.

Panel: Charles L. Schneider, M.D., Professor of Obstetrics and Physiology, University of Michigan, Ann Arbor; J. Garrott Allen, M.D., Chairman of Surgery, Stanford University.

Premiere: Blood Fractions in Clinical Medicine.

TUESDAY, 3:30-5:00 P.M.

Bleeding

Why Johnny Bleeds.

A Case of Unexplained Bleeding from Upper Gastrointestinal Tract.

Clinical Management of Autoimmune Hematologic Disorders.

TUESDAY, 8:00-10:00 P.M.

Alcoholism.

Chemical Tests for Intoxication.

Discussants: Theodore Curphey, M.D., Los Angeles; Mandel Sherman, M.D., Beverly Hills; Mr. William Whelan, San Francisco.

Adenomammectomy—Breast Fillet.

Discussion by Author, Paul A. Kaufman, M.D., Beverly Hills.

I Dress the Wound.

WEDNESDAY, 9:00-12:00 NOON

Pediatrics

Moderator: Harry O. Ryan, M.D., Pasadena.

Panel: Milton Van Dyke, M.D., Long Beach; Stephan van Adelsberg, M.D., Los Angeles.

Management of Breast Feeding.

Neurological Examination of the Newborn.

Intestinal Obstruction in the Newborn and Infant.

Pediatric Gynecology.

WEDNESDAY, 2:00-3:50 P.M.

General Urology

Panel: Jay J. Crane, M.D., Los Angeles; Samuel Bacon, M.D., Hollywood.

Surgical Correction of Male Sterility.

Urinary Calculi.

Surgical Treatment of Renovascular Hypertension.

WEDNESDAY, 4:00-5:00 P.M.

Urology

Moderator: Sam Peck, M.D., San Diego.

Panel: Authors John W. Dorsey, M.D., Long Beach; Robert J. Prentiss, M.D., San Diego; Elmer Belt, M.D., Los Angeles.

Undescended Testicle: Surgical Anatomy of Spermatic Vessels, Spermatic Surgical Triangles and Lateral Spermatic Ligament.

The Repair of Vesico-Vaginal Fistula by the Transperitoneal Transvesical Approach.

Transvaginal Repair of Vesico-Vaginal Fistula.

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION

(a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A.; county medical society/association or A.M.A. membership card.)

(b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.)

(c) Medical secretaries will be admitted upon presentation of a letter from the physician employer.

(d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer.

(e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, dietitians, allied public health personnel, and others will be admitted provided they have proper identification.

(f) *All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.*

POSTGRADUATE COURSES

Presented by the California Medical Association in cooperation with the College of Medical Evangelists and the University of Southern California

Out-of-State Faculty—Guests of the California Medical Association

IRWIN NYDICK, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College, and Research Fellow, Sloan-Kettering Institute, New York.

HENRY J. TUMEN, M.D., Professor and Chairman of the Department of Medicine, Graduate School of Medicine, University of Pennsylvania.

1. CLINICAL NEUROLOGY

Sunday, Monday and Tuesday, April 30, May 1 and 2, 1961

Amphitheater, White Memorial Hospital, 1700 Brooklyn Avenue, Los Angeles

Program planned by the College of Medical Evangelists, Department of Neurology.

Time: Sunday, April 30, 9:00 a.m. to 12:00 noon; Monday and Tuesday, May 1 and 2, 2:00 p.m. to 5:00 p.m.

Fee: $25.00.

8:00 a.m. Sunday—Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to White Memorial Hospital.

Instructional Staff (from College of Medical Evangelists unless otherwise noted):

E. W. Beehler, M.D., Instructor in Neurosurgery.
Cyril B. Courville, M.D., Professor of Neurology.
Laurence Jacobs, M.D., Assistant Clinical Professor of Neurology.
Leslie B. Mann, M.D., Associate Professor of Neurology.
J. M. Nielsen, M.D., Clinical Professor of Medicine (Neurology), UCLA School of Medicine.
Clarence W. Olsen, M.D., Clinical Professor of Neurology.
Erling S. Tobiassen, M.D., Associate Professor of Radiology.

SUNDAY, APRIL 30

Chairman of the Day: Cyril B. Courville, M.D.

8:00 a.m.—*Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to White Memorial Hospital.*

9:00—Brief Review of the Anatomy and Physiology of the Brain and Spinal Cord—Cyril B. Courville, M.D.

10:00—Neurological Signs and Their Significance—J. M. Nielsen, M.D.

11:00—Hyperkinetic Phenomena and Their Medical and Surgical Treatment—L. B. Mann, M.D., and E. W. Beehler, M.D.

MONDAY, MAY 1

Chairman of the Day: C. W. Olsen, M.D.

2:00—Headaches, Diagnosis and Treatment—Cyril B. Courville, M.D.

3:00—Strokes, Diagnosis—C. W. Olsen, M.D.

4:00—Strokes, Treatment—Laurence Jacobs, M.D.

TUESDAY, MAY 2

Chairmen of the Day: C. W. Olsen, M.D., and L. B. Mann, M.D.

2:00—Convulsions, Diagnosis and Management—EEG as an Aid—Leslie B. Mann, M.D.

3:15—Diagnosis of Everyday Lesions of the Skull and Spine—Erling S. Tobiassen, M.D.

4:00—Application of Laboratory Procedures to Neurological Problems—C. W. Olsen, M.D.

2. USE AND LIMITATIONS OF LABORATORY TESTS

Saturday and Sunday, April 29 and 30, 1961

New Auditorium (Room 1645), Los Angeles County Hospital, 1200 N. State Street, Los Angeles

Program planned by the University of Southern California School of Medicine—Phil R. Manning, M.D., Associate Dean, Postgraduate Division.

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Fee: $25.00.

8:00 a.m. daily—Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to Los Angeles County General Hospital.

Instructional Staff:

California Medical Association Guests:

Irwin Nydick, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College and Research Fellow, Sloan-Kettering Institute, New York.

Henry J. Tumen, M.D., Professor and Chairman of the Department of Medicine, Graduate School of Medicine, University of Pennsylvania.

University of Southern California School of Medicine (unless otherwise noted):

- Clarence M. Agress, M.D., Associate Clinical Professor of Medicine—UCLA.
- William Bachrach, M.D., Associate Clinical Professor of Medicine.
- Benjamin Barbour, M.D., Instructor in Medicine.
- David H. Blankenhorn, M.D., Assistant Professor of Medicine.
- Boris Catz, M.D., Associate Clinical Professor of Medicine.
- Thomas P. Dowling, M.D.
- Ernest Gold, M.D., Assistant Professor of Medicine.
- Bernard J. Haverback, M.D., Assistant Professor of Medicine.
- Richard J. Henry, M.D., Adjunct Associate Professor of Biochemistry.
- Irwin Hoffman, M.D., Assistant Clinical Professor of Medicine.
- Ralph E. Homann, M.D., Clinical Professor of Medicine.
- Helen E. Martin, M.D., Professor of Medicine.
- Donald W. Petit, M.D., Associate Professor of Medicine.
- Emmett Reilly, M.D., Assistant Clinical Professor of Pathology.
- Edward Shapiro, M.D., Clinical Professor of Medicine.
- Arnold G. Ware, Ph.D., Professor of Biochemistry and Nutrition.
- Maurice Yettra, M.D., Associate Clinical Professor of Medicine.

Program Coordinators: Donald W. Petit, M.D. and Edward Shapiro, M.D.

SATURDAY, APRIL 29

8:00 a.m.—*Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to Los Angeles County General Hospital.*

9:00-9:30—**Common Laboratory Errors**—Arnold G. Ware, Ph.D.

9:30-10:00—**Cost Accounting of the Laboratory**—Edward Shapiro, M.D.

10:00-10:30—**Coffee Break.**

10:30-12:00—**The Laboratory in the Diagnosis of Hematology.**

Moderator—Donald W. Petit, M.D.

Maurice Yettra, M.D., Arnold G. Ware, Ph.D., Emmett Reilly, M.D.

12:00-1:30—**Lunch.**

1:30-3:00—**Laboratory Diagnosis of Heart Disease.**

Moderator—Edward Shapiro, M.D.

Irwin Hoffman, M.D., David H. Blankenhorn, M.D., Clarence M. Agress, M.D., Irwin Nydick, M.D.

3:00-3:30—**Coffee Break.**

3:30-5:00—**The Laboratory Diagnosis in Renal Diseases and Electrolyte Problems.**

Moderator—Edward Shapiro, M.D.

Helen E. Martin, M.D., Ralph E. Homann, M.D., Benjamin Barbour, M.D.

SUNDAY, APRIL 30

8:00 a.m.—*Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to Los Angeles County General Hospital.*

9:00-10:30—**The Use of the Laboratory in Diagnosing Diseases of Liver, Gallbladder and Pancreas.**

Moderator—Donald W. Petit, M.D.

William Bachrach, M.D., Richard J. Henry, M.D., Bernard J. Haverback, M.D., Henry J. Tumen, M.D.

10:30-10:45—**Coffee Break.**

10:45-12:15—**The Laboratory in the Diagnosis of Endocrine Disturbances.**

Moderator—Donald W. Petit, M.D.

Boris Catz, M.D., Tom Dowling, M.D., Ernest Gold, M.D., Richard J. Henry, M.D.

3. PRACTICAL GYNECOLOGY

Saturday and Sunday, April 29 and 30, 1961

McKibben Hall Auditorium, Medical School Campus, 2025 Zonal Avenue, Los Angeles

Program planned by the University of Southern California School of Medicine—Phil R. Manning, M.D., Associate Dean, Postgraduate Division.

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Fee: $25.00.

8:00 a.m. daily—Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to USC School of Medicine.

Instructional Staff:

- James C. Caillouette, M.D., Instructor in Obstetrics and Gynecology.
- Lester T. Hibbard, M.D., Associate Clinical Professor in Obstetrics and Gynecology.
- Edward G. Jones, M.D., Associate Clinical Professor in Obstetrics and Gynecology.
- Charles F. Langmade, M.D., Associate Clinical Professor in Obstetrics and Gynecology.
- George A. Macer, M.D., Assistant Clinical Professor of Obstetrics and Gynecology.

James M. Maharry, M.D., Instructor in Obstetrics and Gynecology.

Robert M. McVann, M.D., Assistant Clinical Professor in Obstetrics and Gynecology.

John J. Molitor, M.D., Instructor in Obstetrics and Gynecology.

James F. Nolan, M.D., Associate Clinical Professor in Obstetrics and Gynecology.

Robert A. Sack, M.D., Instructor in Obstetrics and Gynecology.

Richard Taw, M.D., Associate Clinical Professor in Obstetrics and Gynecology.

Alexander Varga, M.D., Instructor in Obstetrics and Gynecology.

A. N. Webb, M.D., Associate Clinical Professor of Obstetrics and Gynecology.

SATURDAY, APRIL 29

8:00 a.m. daily—*Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to USC School of Medicine.*

Welcoming Address—Erle Henriksen, M.D., *Program Coordinator.*

MORNING SESSION—James F. Nolan, M.D., *Presiding.*

9:00-9:40—**The Office Diagnosis of Gynecological Malignancies**—Edward G. Jones, M.D.

9:40-10:20—**New Drugs in the Management of Pelvic Malignancies**—Alexander Varga, M.D.

10:20-10:40—**Coffee Break.**

10:40-11:20—**The Management of Cervical and Endometrial Cancer**—John J. Molitor, M.D.

11:20-12:00—**Blood Transfusions**—Robert Sack, M.D.

Question and Answer Session follows each lecture.

12:00-1:30—**Lunch**

AFTERNOON SESSION—A. N. Webb, M.D., *Presiding.*

1:30-2:10—**Pelvic Inflammatory Disease, Diagnosis and Management**—Charles Langmade, M.D.

2:10-2:50—**The Management of Sepsis**—James C. Caillouette, M.D.

2:50-3:05—**Coffee Break.**

3:05-3:45—**Extra Uterine Pregnancies**—Lester T. Hibbard, M.D.

3:45-4:25—**Leukorrhea**—James M. Maharry, M.D.

4:25-5:00—**The Stein-Leventhal Syndrome**—Robert McVann, M.D.

Question and Answer Session follows each lecture.

SUNDAY, APRIL 30

8:00 a.m. daily—*Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to USC School of Medicine.*

George Macer, M.D., *Presiding*

9:00-9:45—**The Indications for Hormonal Therapy in Gynecology**—Richard Taw, M.D.

9:45-10:00—**Coffee Break.**

10:00-12:00—**"What Would You Do?"**

Richard Taw, M.D., Edward G. Jones, M.D., Charles Langmade, M.D., James F. Nolan, M.D., Lester T. Hibbard, M.D.

4. CARDIAC RESUSCITATION—Two All-inclusive Sessions*

Raulston Building (Room 211), USC School of Medicine, 2025 Zonal Avenue, Los Angeles

Program planned by the University of Southern California School of Medicine—Phil R. Manning, M.D., Associate Dean, Postgraduate Division.

Time: April 29, 9:00 to 11:00 a.m.; April 30, 2:00 to 4:00 p.m.

Fee: $30.00 each Session.

8:00 a.m. Saturday—Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to USC School of Medicine.

SATURDAY, APRIL 29—SESSION I

8:00 a.m. Saturday—*Chartered bus leaves Wilshire entrance of Ambassador Hotel to go to USC School of Medicine.*

9:00-11:00—William P. Mikkelsen, M.D., Associate Clinical Professor of Surgery.

SUNDAY, APRIL 30—SESSION II

2:00-4:00—William R. Smith, M.D., Instructor in Surgery.

The course offers practical instruction on cardiac compression, the use of electrical stimulation or injection of drugs into the heart in the case of ventricular standstill or arrest in surgery. It is based on accepted methods used successfully here and in other medical centers.

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*Each Session limited to 15 registrants from areas other than San Francisco or Los Angeles.

WOMAN'S AUXILIARY *to the* CALIFORNIA MEDICAL ASSOCIATION

Thirty-First Annual Convention, April 30 to May 2, 1961

Headquarters: Ambassador Hotel, Los Angeles

MRS. SAMUEL GENDEL, President

MRS. LAWRENCE CUSTER, President-Elect

Convention Chairman: MRS. SAMUEL K. BACON
Convention Co-Chairman: MRS. ALBERT F. STELHORN

REGISTRATION

Main Lobby

Sunday, April 30	8:30 a.m. to 4:00 p.m.
Monday, May 1	8:30 a.m. to 4:00 p.m.
Tuesday, May 2	8:30 a.m. to 10:00 a.m.

SATURDAY, APRIL 29

4:00 p.m.—Annual Report of the Woman's Auxiliary by the President, Mrs. Samuel Gendel, to the California Medical Association House of Delegates, Embassy Room. All doctors' wives are invited to attend. (Auxiliary members will not register for this meeting. Woman's Auxiliary Registration will start Sunday morning in the Main Lobby.)

SUNDAY, APRIL 30

9:00 a.m.—Executive Committee breakfast meeting, Garden Room.

2:30 p.m.—Pre-Convention Board Meeting, Rose Room.

7:00-8:00 p.m.—California Medical Association Reception (admittance by ticket to Presidents' Dinner) honoring Doctor Paul D. Foster, President of the California Medical Association, and Mrs. Samuel Gendel, President of the Woman's Auxiliary to the California Medical Association, Embassy Room.

8:00 p.m.—Presidents' Dinner and Ball honoring the President of the California Medical Association, Dr. Paul D. Foster, and the President of the Woman's Auxiliary to the California Medical Association, Mrs. Samuel Gendel, Cocoanut Grove. Formal dress optional.

MONDAY, MAY 1

9:00 a.m.—First Business Meeting of the 31st Annual Meeting, Mrs. Samuel Gendel, presiding, East Venetian Room.

2:00 p.m.—Second business meeting, East Venetian Room.

TUESDAY, MAY 2

9:00 a.m.—Third Business Meeting, Mrs. Samuel Gendel, presiding, East Venetian Room.

12:45 p.m.—President's Luncheon and Fashion Show honoring Mrs. Lawrence Custer; members of the State Advisory Board, and Past State Presidents, Cocoanut Grove. Style Show by Irene Somerset Fashions. Entertainment: John Raitt, baritone.

3:30 p.m.—Post-Convention Board Meeting. Mrs. Lawrence Custer, presiding, Grove Lounge.

Technical Exhibits

The Ballroom, Sunset Room and Boulevard Room of the Ambassador Hotel will again house the technical exhibits. This area is noted as outstanding for exhibit purposes and a record number of exhibitors will present their products and services for members of the Association.

All exhibits and all products exhibited have been screened by a committee as a means of eliminating those which do not meet high standards. The exhibitors agree to this procedure and agree that by this means each will be in good company.

Here in one area will be found the latest developments in drugs, equipment and services to aid the physician in his professional activities. All physicians are urged to visit the exhibits; meetings have been planned to allow ample time for this important activity. Your visit will not only help bring your own knowledge up to-date; it will demonstrate to our exhibitors, who contribute so much to the success of the meeting, that we recognize and appreciate their cooperation.

Exhibits will be open from 9 a.m. to 5 p.m. each day, with an early closing on Wednesday.

ABBOTT LABORATORIES — Sunset Room
North Chicago, Illinois — Booth 72

Abbott Laboratories invites you to visit our exhibit. Our representatives will be happy to answer any questions you may have concerning our leading products and new developments.

ALTA-DENA DAIRY — Sunset Room
Monrovia — Booth 36

Certified Milk will again be displayed along with Los Angeles County Medical Association Milk Commission Laboratory records for your examination.

KEFIR—*The new Continental Cultured Milk Drink* will be served. Kefir contains Lactobacillus Acidophilus and L. Bulgaricus. Kefir leaves an exhilarating after-taste in the mouth, making it pleasant to drink and is a very easy to digest protein food.

Doctors are recommending it for use following antibiotic therapy to help restore bacterial flora in the intestinal tract.

Qualified men will be at your service to answer your questions and serve you samples. Ask for the descriptive card for your file.

AMBCO INC. — Sunset Room
Los Angeles — Booth 73

AMBCO representatives cordially invite you to visit their booth where they will exhibit the latest developments in Transistorized AUDIOMETERS, including new models—a complete line of audiometers for every use and for every price.

AMBCO line of audiometers include the ever popular, battery-operated instrument, the OTOMETER and OTO-CHEK, as well as A.C.-powered units.

Competent personnel will be on hand to answer any questions you may have concerning our leading products and new developments, in the auditory field.

AMERICAN STERILIZER COMPANY — Boulevard Room
Erie, Pennsylvania — Booth 108

Visitors to the American Sterilizer exhibits in booth 108 will have the opportunity personally to operate the recently introduced Dynapoise Physician's Table. Physicians in all fields of practice have shown marked interest in the ease and speed of patient positioning attained by Amsco's new concept of a powerized examination and treatment table.

Also on exhibit will be the complete line of sterilizers for offices, clinics, and medical facilities in industry. Included will be the new 8816M Autoclave, the 1022 Cabinet Sterilizer, and the ever-popular 613R Dynaclave. Amsco Sanitizers will also be displayed.

ARMOUR PHARMACEUTICAL COMPANY — Sunset Room
Chicago, Illinois — Booth 68

The Armour Pharmaceutical Company exhibit will feature Chymoral, a new systemic anti-inflammatory enzyme tablet which reduces inflammation, swelling and pain; Chymar Aqueous, the parenteral systemic anti-inflammatory enzyme; and Pentritol Tempules which release 30 mg. of pentaerythritol tetranitrate in three divided doses to provide twelve-hour relief in angina pectoris.

AUDIO-DIGEST FOUNDATION — Ballroom
Glendale — Booth 14

Audio-Digest Foundation (a non-profit subsidiary of the California Medical Association), gives the busy physician a time-saving tour through the best of some 600 current medical journals, plus the highlights of scores of national meetings. Time-proven, but still unique—these medical tape-recorded services are now offered in six series—General Practice (issued weekly and bi-weekly), and Pediatrics, Internal Medicine, Surgery, Obstetrics and Gynecology, Anesthesiology (all issued semi-monthly). The one-hour long tapes are selected and reviewed by a professional Board of Editors. Digest subscribers listen in their car, home or office. The Foundation also offers medical lectures by nationally-recognized authorities.

BARNES-HIND LABORATORIES, INC. — Sunset Room
Sunnyvale — Booth 58

DON BAXTER, INC. — Boulevard Room
Glendale — Booth 94

Don Baxter, Inc. presents, "Safety Through Simplicity," the finest parenteral system.

Features will be: The Isolyte Family of electrolyte solutions. Simplified therapy for maintenance and replacement in adults and children.

The Kadalex family of Potassium Chloride Solutions containing 20 and 40 mEq. per liter. Now available in these most used dosages.

Peritoneal Dialysis solutions with complete administration equipment which greatly simplifies this procedure with a high degree of safety.

Stylex, the finest precision-made, expendable syringe now available in a wide range of sizes and needle combinations.

BERKELEY BIOLOGICALS — Boulevard Room
Berkeley — Booth 102

A complete line of allergenic extracts for diagnostic testing and for specific treatment of allergic diseases will be emphasized. Diagnostic testing sets containing a regional selection of pollens will be on display for inspection. A typical treatment set will also be on display and descriptive literature and pamphlets will be available for the physicians.

Our representatives will be present to illustrate the use of the test sets and to discuss and answer questions on our products and service.

BORCHERDT CO. — Sunset Room
Chicago, Illinois — Booth 47

Borcherdt's are featuring:

Malt Soup Extract: Laxative modifier of milk for constipated babies. Also useful for geriatric constipation and pruritus ani.

Urolitia: For chronic urinary tract infections in older patients. Quickly relieves burning urination.

Ferromalt Tablets: Non-constipating Ferrous Sulfate Tablets. Good clinical response without usual side effects of oral iron. Ferromalt Tablets are inexpensive and well tolerated.

Stop in for recently published papers and samples.

BROEMMEL PHARMACEUTICALS — Sunset Room
San Francisco — Booth 44

Broemmel Pharmaceuticals specializes in products for eye, ear, nose and throat diseases. High ethical standards, constant efforts toward continuous improvement and keeping abreast with the latest medical developments have contributed to the excellent rating its products enjoy among all those who know them. The more recent Broemmel products which highlight this year's exhibit are: Op-Isophrin-AB, an antibiotic sterile ophthalmic solution without steroids, Bro-Parin, an optic preparation with the heparin-antibiotic complex, Wet Tone-B, a contact lens solution. Since Broemmel products speak for themselves, all members are invited to visit Booth 44 and obtain information, literature and samples.

CHARLES BRUNING COMPANY — Boulevard Room
Mount Prospect, Illinois — Booth 91

The Bruning Company will feature the newest method of processing doctors' monthly statements. It eliminates typing of the patient's name and address and gives each patient an itemized record of charges. Any nurse or office girl can process 500 statements in less than two hours.

BURROUGHS WELLCOME & CO. — Sunset Room
Tuckahoe, New York — Booth 76

BURTON, PARSONS & COMPANY — Sunset Room
Washington, D. C. — Booth 35

You are cordially invited to stop at the Burton, Parsons & Company exhibit where our representative will be showing Konsyl, L. A. Formula, neutraCarb and EKG Sol. Samples, descriptive literature and information will be available on all these products. Konsyl and L. A. Formula are the original refined Psyllium bulk laxatives. neutraCarb is the antacid, with Vitamin C, and has a delightful lemon flavor. EKG Sol is the new and modern electrode cream for electrocardiology and electro-encephalography.

CANRIGHT CORPORATION — Sunset Room
Glendale — Booth 57

G. W. CARNRICK COMPANY — Boulevard Room
Newark, New Jersey — Booth 80

CASS & JOHANSING — Sunset Room
Los Angeles — Booth 48

Representatives will be present to discuss the approved Association Insurance Programs—Professional Liability, Life and Accidental Death and Dismemberment.

In addition, assistance in complete insurance programming will be available.

CIBA PHARMACEUTICAL PRODUCTS INC. — Sunset Room
Summit, New Jersey — Booth 55

THE COCA-COLA COMPANY — Sunset Room
Atlanta, Georgia — Booth 43

Ice-cold Coca-Cola served through the courtesy and cooperation of the Coca-Cola Bottling Company of Los Angeles and the Coca-Cola Company.

COLUMBUS PHARMACAL COMPANY
Columbus, Ohio — Boulevard Room—Booth 92

You are cordially invited to visit the Columbus booth. Featured is Geroniazol TT (Tempotrol—time controlled therapy)—combats senile confusion around the clock. Continuous cerebral oxygenation with one tablet b.i.d. Decreases anxiety and emotional instability. Improves appetite, sleep pattern and interest of patient. Geroniazol TT is non-hormonal, non-excitatory and non-hypertensive.

CORECO RESEARCH CORP. — Ballroom Foyer
New York, New York — Booth 3

The Coret camera embodies the principle of electronic flash and constant automatic control of such factors as distance, aperture, field and exposure. Now, for the first time, Coreco offers a completely automatic professional clinical camera purposely designed to achieve the ultimate in surface, intraoral, and intra-tubular photography. Because of the simplicity of operation, even an inexperienced doctor or nurse can achieve consistently perfect color transparencies.

CROOKES-BARNES LABORATORIES, INC. — Sunset Room
Wayne, New Jersey — Booth 37

The Crookes-Barnes Laboratories exhibit includes preparations of special interest in the fields of:

Atherosclerosis—Lenic H.P.—Capsules to help lower blood cholesterol levels.

Geriatric Mental Health—L-Blutavite—A safe biochemical cerebral tonic to improve mental status and social adjustment in the elderly patient.

Ophthalmology — Iso-Sol Sterile Ophthalmics — For clinical, surgical and out-patient use.

CUTTER LABORATORIES Sunset Room
Berkeley Booth 75

Cutter Laboratories exhibit will feature the following products:

Barbicaine, an "infant colic" preparation which is composed of procaine hydrochloride, pentabarbital and phenobarbital in a stabilized solution for drop dosage.

Hyper-Tet, the prophylactic tetanus antitoxin product made from the gamma globulin fraction of human blood from hyper-immunized donors.

Other blood fraction specialties—*Hypertussis, Hyparotin, Polio Immune Globulin.*

By-Na-Mid, a new anti-fungal topical agent in four different forms—ointment, tincture, lotion and powder.

EDWARD DALTON COMPANY Sunset Room
Evansville, Indiana Booths 39 and 40

DESITIN CHEMICAL COMPANY Ballroom
Providence, Rhode Island Booth 21

Desitin Ointment: For treatment of burns, ulcers, diaper rash, abrasions, etc.

Desitin Powder: Relieves chafing, sunburn, diaper rash, etc.

Desitin Suppositories and Rectal Ointment: Relieve pain and itching in uncomplicated hemorrhoids, fissures.

Desitin Baby Lotion: Protective, antiseptic.

Desitin Acne Cream: A non-staining, flesh-tinted "Medicream" for the treatment of Acne Vulgaris.

Desitin Cosmetic and Nursery Soap: Supermild.

Desitin Suppositories with Hydrocortisone: Prompt response to inflammatory conditions in proctitis, severe pruritus, edema.

DEVEREUX SCHOOLS, INC. Boulevard Room
Booth 77

THE DIETENE COMPANY Sunset Room
Minneapolis, Minnesota Booth 49

Have you tasted Meritene? Meritene is the good-tasting *Protein*-vitamin-mineral Food Supplement prescribed to provide concentrated nutrition for patients with poor appetite or tolerance for ordinary food. Visit our booth and let us serve you a cool, refreshing Meritene Nourishment.

While there, review also our Dietene Reducing Plan, designed to get better cooperation from over-weight patients. The Dietene Plan provides optimum nutrition and maximum satiety without the use of drugs.

Meritene and Dietene are advertised only to the Medical Profession.

DOHO CHEMICAL CORP. Ballroom
New York, New York Booth 13

Auralgan: Ear medication for relief of pain in Otitis Media; also removal of Cerumen;

Rhinalgan: Nasal decongestant free from systemic or circulatory effect. Safe for infants—aged.

Otosmosan: Non-Toxic fungicide-bactericide (gram negative-gram positive) for suppurative and aural dermatomycotic ears;

Larylgan: Soothing throat spray and gargle for infectious and noninfectious sore throat involvements.

Biotosmosan HC: The solution to the "Problem Ear." Antimicrobial, Anti-inflammatory, De-inflammatory, Antiallergic, Antipruritic.

DORSEY LABORATORIES Sunset Room
Lincoln, Nebraska Booth 45

EATON LABORATORIES Ballroom
Norwich, New York Booth 20

New Furadantin (brand of nitrofurantoin) Sodium for Intravenous Use—an alternative route of administration for Furadantin in patients unable to take oral medication.

Furadantin Sodium for Intravenous Use fills a need for a parenteral form in the treatment of genitourinary infections, such as pyelonephritis, pyelitis, cystitis, prostatitis—and in selected systemic infections—even some which have failed to respond to other antibacterial therapy.

EISELE & COMPANY Sunset Room
Nashville, Tennessee Booth 62

ELECTRONIC INDUSTRIES, INC. Sunset Room
Berkeley Booth 41

ENCYCLOPAEDIA BRITANNICA Sunset Room
Chicago, Illinois Booth 42

Encyclopaedia Britannica, Inc.—latest revision in 200 years—available in Imperial or Heirloom bindings at discount prices.

CHARLES O. FINLEY & CO. Sunset Room
Chicago, Illinois Booth 31

E. FOUGERA & CO. Sunset Room
Hicksville, New York Booth 63

The Fougera exhibit will feature older, well established products and newer items of interest to all physicians, but particularly applicable to Radiology, Cardiology, Internal Medicine, Dermatology. Clinical material, literature and office aids in connection with these areas of medicine are available at the booth. Informed attendants will be pleased to service your request.

GEIGY PHARMACEUTICALS Ballroom
Yonkers, New York Booths 23 and 24

Geigy cordially invites Members and Guests of the Association to its display booths. The newest technics relating to bowel hygiene in addition to more recent developments in therapy of cardiovascular, metabolic and psychiatric disorders may be discussed with physicians and representatives in attendance.

GREAT BOOKS OF THE WESTERN WORLD Ballroom Foyer
Chicago, Illinois Booth 4

Great Books and The Syntopicon presented by Encyclopaedia Britannica in collaboration with the University of Chicago. The accumulated wisdom of three thousand years of civilization, together with the revolutionary idea-index called the Syntopicon—that ingenious new literary invention making magically available and easily accessible all of the wisdom and the knowledge contained in the Great Books. These books contain the works that are indispensable to the liberal education of a free man in the 20th century. They are the books that are essential in the library of every thinking person.

H. J. HEINZ COMPANY — Sunset Room
Pittsburgh, Pennsylvania — Booth 34

Heinz Baby Foods announces new varieties—Strained and Junior Cottage Cheese and Bananas; Strained and Junior Pineapple-Orange Dessert; Strained and Junior High Meat Dinners; Ham and Eggs (yolks) in Strained; several New Juice Drinks: Orange-Pineapple, Orange-Apple-Banana, Pineapple-Grapefruit—all with Vitamin C added.

Heinz Baby Foods are packed in screw cap jars in every variety in glass.

Literature includes Nutritional Data, "ABC's for Baby's Mealtime," and up-to-date lists of Heinz Baby Foods including a list of those that are free of wheat, egg, milk and citrus juices. Please register for these.

HOLLAND-RANTOS COMPANY, INC. — Ballroom
New York, New York — Booth 97

The H-R exhibit will feature:

. . . Antimycotic (non-messy) Hyva *Gentian Violet Vaginal Tablets;*

. . . Trichomonicidal/fungicidal/bactericidal Nylmerate *Jelly and Antiseptic Solution Concentrate* for vaginal trichomoniasis and mixed infections;

. . . Hollandex *Silicone Ointment with Natural Vitamins A and D*—medication for neuro- and contact dermatitis, decubitus ulcers, diaper rash, skin dryness/chafing, etc.;

. . . *Special* Koromex *A* for use when "jelly-alone" for conception control is advised, also contouring Koro-Flex *Diaphragms* (facilitate correct placement), and standard Koromex *Jelly, Cream, Diaphragms and Sets.*

JESSUP CERTIFIED FARMS — Sunset Room
Glendale — Booth 46

Educational in nature, the Jessup exhibit points up to the functions performed by the American Association of Medical Milk Commissions at the national level, and the work of the Los Angeles County Medical Milk Commission at the local level.

Free samples of Certified Guernsey, Certified Holstein, and Certified Non-Fat Milk are available at the Dairy Bar.

JOHNSON & JOHNSON — Boulevard Room
New Brunswick, New Jersey — Booth 101

Johnson & Johnson will display the latest improvements in surgical dressings, as developed by the Johnson & Johnson Research Laboratories. Of special interest is Surgicel Absorbable Hemostat, a major advance in the control of hemorrhage which does not depend upon the normal clotting mechanism. Dermicel Surgical Tape, a special-purpose dressing tape for patients with unusual adhesive tape sensitivity, is also of particular interest. Other products, designed for your office, hospital or patient use, are also displayed. You will find well-informed representatives pleased to discuss these products or provide information on any other items made available by the world's largest manufacturer of surgical dressings and baby products.

KEY CORPORATION PHARMACEUTICALS — Boulevard Room
Miami, Florida — Booth 81

LEDERLE LABORATORIES — Ballroom
Pearl River, New York — Booth 6

Your Lederle representative will be on hand to serve you. He can furnish information on any Lederle product and is prepared to bring to bear on any of your medical problems the knowledge of the world-wide Lederle research organization.

ELI LILLY AND COMPANY — Boulevard Room
Indianapolis, Indiana — Booths 95 and 96

You are cordially invited to visit the Lilly exhibit located in booths 95 and 96. The Lilly sales people in attendance welcome your questions about Lilly products and recent therapeutic developments.

J. B. LIPPINCOTT COMPANY — Ballroom Foyer
Philadelphia, Pennsylvania — Booth 1

J. B. Lippincott Company presents, for your approval, a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

LLOYD BROTHERS, Inc. — Boulevard Room
Cincinnati, Ohio — Booth 110

Welcome to the Lloyd Brothers exhibit. Our professionally trained sales representatives will be pleased to greet you and discuss the merits of our products in your practice. Of particular interest will be a new booklet on erythropoietin, the erythropoietic hormone.

LOMA LINDA FOOD COMPANY — Sunset Room
Arlington — Booth 61

With the background of years of experience in perfecting a hypoallergenic milk powder, and also a newly developed concentrated liquid milk the protein of which is fully derived from the soybean and formulated with other essential additives to care for the needs of babies, growing children and adults, the Loma Linda Food Company will be happy to welcome you to their exhibit. Attendants will be pleased to discuss the values of Soyalac powder and concentrated liquid. Samples of this flavorful product will be served at the exhibit.

P. LORILLARD COMPANY — Sunset Room
New York, New York — Booth 66

P. Lorillard Company invites you to visit the Kent Cigarette Exhibit.

We are presenting the Story of Kent Cigarettes. And a big part of that story is why you'll feel better about smoking with the taste of Kent.

Kent with the Micronite filter refines away harsh flavor . . . refines away hot taste . . . makes the taste of a cigarette mild.

A table cigarette box with your signature in gold will be a pleasant souvenir of your visit to the convention.

MALTBIE LABORATORIES — Sunset Room
Belleville, New Jersey — Booth 67

MARION LABORATORIES, INC. — Sunset Room
Kansas City, Missouri — Booth 64

MARSHALL ERDMAN & ASSOCIATES, INC. — Boulevard Room
Santa Barbara — Booth 105

Pictures and typical floor plans of Marshall Erdman pre-cut and pre-fabricated custom-designed medical office buildings for doctors in solo or group practice. Marshall

Erdman & Associates, Inc., specialists with over 100 years experience in designing, engineering and building quality medical office buildings for doctors in over 25 states. A complete building service.

THE S. E. MASSENGILL COMPANY
Boulevard Room
Bristol, Tennessee
Booth 104

The Massengill exhibit will feature Trimagill Powder and Trimagill Vaginal Inserts—now The Logical Therapy for Vaginal Infections! Trimagill is a new, rational, convenient therapy for vaginal infections; Adrenosem, the unique systemic hemostat; Obedrin, the superior weight reducing aid; the Salcort Family, offering a complete range of arthritic therapy; and Massengill Powder, the douche preparation of choice. If you wish, literature and samples will be available by mail to you. Best wishes from Massengill Representatives to the members of the California Medical Association for a most informative meeting.

McNEIL LABORATORIES
Ballroom Foyer
Philadelphia, Pennsylvania
Booth 2

MEAD JOHNSON & COMPANY
Sunset Room
Evansville, Indiana
Booth 53

The Mead Johnson exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about their products.

MEDICAL INDUSTRIES
Boulevard Room
Chatsworth
Booth 84

THE MEDICAL PROTECTIVE COMPANY
Ballroom
Fort Wayne, Indiana
Booth 15

As the No. 1 Malpractice Insurer, The Medical Protective Company offers unexcelled coverage. With exceptional proficiency in defense, so essential to the Doctor's protection today, its experience in successfully handling 81,000 claims and suits during sixty-two years of Professional Protection Exclusively is unparalleled in the professional liability field.

MERCK SHARP & DOHME
Ballroom
Philadelphia, Pennsylvania
Booth 19

WM. S. MERRELL COMPANY
Sunset Room
Cincinnati, Ohio
Booth 33

A summary of mounting clinical evidence attesting to the effectiveness of Mer/29 in patients with hyper-cholesterolemia and related conditions will be presented by Merrell. Update your knowledge of Mer/29 by stopping briefly at the Merrell display. Salesmen will summarize the extensive results of Mer/29 therapy for you and answer questions you may have. Best wishes for a most enjoyable convention.

MILEX-FERTILEX COMPANY
Sunset Room
Los Angeles
Booth 69

New Cervical Spatula described as "best designed instrument for taking Papanicolaou smears" now included with Cancer Detection Sets.

New design Wide Seal Crescent (suction) diaphragm on display.

MISSION PHARMACAL COMPANY
Boulevard Room
San Antonio, Texas
Booth 100

Mission will present the following products: Homapin-4, a potent antispasmodic which is reported to be four times as potent as atropine in depressing ganglionic transmission; Prulet Tablets, a gentle laxative, containing an active ingredient which is analogous to a substance found in prunes; Supac-B, analgesic tablet, is a superior buffered A.P.C.

MUTUAL BENEFIT LIFE INSURANCE COMPANY
Boulevard Room
Newark, New Jersey
Booth 109

"Financial Planning for the Physician." Trained representatives associated with the Los Angeles, San Diego, San Francisco and San Jose offices give information at the booth on estate planning, NSLI disability protection, and other aspects of life insurance. Visitors can secure Tax Calculator Slide Rule at booth without obligation, can register for "Estate Planning For Physicians" and other booklets that the physician will find helpful in financial planning. Mutual Benefit Life was founded in 1845 and has had its home office in Newark, N. J. since its founding. The company appointed its first representative in California in 1849.

THE NETTLESHIP COMPANY
Sunset Room
Los Angeles
Booth 70

Administrators of Professional Liability, Group Accident and Sickness, and Life Insurance Programs for County Medical Associations in Southern California.

Qualified representatives available to discuss problems pertaining to hospital or individual professional liability coverage, accident and sickness, life, or other types of insurance.

Literature, which will assist in the prevention of claims and various forms to be used to protect, as far as possible, against malpractice claims.

ORGANON, INC.
Sunset Room
West Orange, New Jersey
Booth 50

Physicians are cordially invited to visit the Organon booth for information on useful therapeutic specialties. Included among these will be: Cortrophin-Zinc, the long-acting aqueous ACTH indicated for the relief of allergic and inflammatory disorders; Durabolin, a totally new anabolic stimulant offering prolonged tissue-building action; Nugestoral, the new aid for the abortion-prone patient containing those factors known to contribute to fetal salvage and Wigraine, the rapid acting, complete migraine therapy. Organon representatives will gladly discuss these specialties with all interested physicians.

ORTHO PHARMACEUTICAL CORPORATION
Boulevard Room
Raritan, New Jersey
Booth 78

At booth No. 78 Ortho is presenting the new monilicidal vaginal cream, Sporostacin. This emollient white cream contains the unique chemical chlordantoin which, because of its structure, has the unusual ability to penetrate the monilial membrane. Clinically proved, Sporostacin Chlordantoin Cream is the treatment of choice in monilial vaginitis.

PACIFIC TELEPHONE COMPANY
Ballroom—Booth 9

PARKE, DAVIS & COMPANY Ballroom
Detroit, Michigan Booth 30

Medical service members of our staff will be in attendance at our booth to discuss important Parke-Davis specialties which will be on display.

PERSON & COVEY Sunset Room
Glendale Booth 51

PHARMACIA LABORATORIES, INC. Boulevard Room
New York, New York Booth 99

Pharmacia Laboratories, Inc., 501 5th Avenue, New York, New York, will exhibit in booth No. 99, its product, Azulfidine, a new sulfa compound for the treatment of ulcerative colitis and regional enteritis. Also, Pharmacia will exhibit Pharmalax, "the suppository with enema-like action." The quick action of Pharmalax causes defecation through mechanical stimulation of the intestinal musculature by carbon-dioxide released from the suppository. Skopyl, a new concept in the medical treatment of infant colic will also be displayed. Literature and important reprints will be available upon request.

PITCHER ELECTRONICS, INC. Ballroom
Brea Booth 18

The latest modality available to the medical profession will be featured. Be sure to see the unit that provides therapeutic cold in a convenient unit for office use. Factory trained personnel in attendance at the booth.

Also to be shown is the latest in cleaning surgical instruments, syringes and needles—Steam Implosion, combined with ultrasound.

PROCTER & GAMBLE COMPANY Sunset Room
Cincinnati, Ohio Booth 71

Ivory Soap (Procter & Gamble) offers a series of time-saving leaflet pads for doctors, each pad containing fifty identical tear-out sheets. These sheets, which may be given to patients, contain routine instructions covering six different topics. There are also samples of other free, helpful material prepared especially for physicians.

Mrs. Christyne Schwab in charge.

THE PURDUE FREDERICK COMPANY Sunset Room
New York, New York Booth 32

Cerumenex: A cerumenolytic for the easy and quick removal of excessive cerumen. Non-irritating and non-sensitizing. Contains Cerapon, a new surfactant, with propylene glycol as carrier and chlorbutanol as preservative.

Senokot: Constipation corrective. Concentrated total senna glycosides which activate Auerbach's plexus, initiate normal neuroperistalsis.

Senokap: Produces timed stool softening and elimination by the addition of dioctyl sodium sulfosuccinate to Senokot.

Senokot with Psyllium: Adds the bulk effect of psyllium to Senokot.

Senobile: Utilizes the peristaltic action of bile salts with Senokot.

R. J. REYNOLDS TOBACCO COMPANY Boulevard Room
Winston-Salem, North Carolina Booth 87

Welcome to the R. J. Reynolds Tobacco Company Exhibit! You are cordially invited to receive a cigarette case (monogrammed with your initials) containing your choice of Camel, Winston Filter, Menthol fresh Salem, or Cavalier King Size Cigarettes.

RITTER COMPANY, INC. Sunset Room
Rochester, New York Booth 38

The Ritter Medical Division will exhibit the automatic, self-calculating L-F BasalMeteR, the Ritter Universal Table with exclusive hydraulic lift and the Castle Office Sterilizers and Examining Lights.

Capable factory trained representatives will be on hand to demonstrate these products and answer your questions.

It will be a pleasure to have you visit our exhibit.

A. H. ROBINS COMPANY, INC. Ballroom
Richmond, Virginia Booth 22

Ask the Robins representatives about Dimetane, the antihistamine with unsurpassed potency and placebo-like side effects, and Entozyme and Donnazyme, the digestants proved especially suitable for your gallbladder or "nervous indigestion" patients, respectively. They will also be happy to discuss time-tested Donnatal (antispasmodic-sedative) and Allbee with C (high potency B and C vitamins) or other Robins products.

ROCHE LABORATORIES Ballroom
Nutley, New Jersey Booth 16

Librium—a therapeutic agent for superior, safer, faster control of anxiety, nervousness, tension and other common emotional disturbances without the dulling effect of depressant action of the tranquilizers.

Madribon—is a completely different, low-dosage sulfonamide of particular value in the treatment of bacterial infections especially respiratory infections.

Tigan—a specific antiemetic agent effective both prophylactically and therapeutically against most clinically significant types of nausea and vomiting.

J. B. ROERIG & CO. Ballroom
New York, New York Booth 26

ROSS LABORATORIES Sunset Room
Columbus, Ohio Booth 74

Ross Laboratories, who also manufactures Similac, features Similac with Iron, a new prepared infant formula supplying 12 mg. of ferrous iron per quart of formula. Similac with Iron is designed for use at the time exogenous iron is indicated in infancy to support the usual diet and to provide prophylaxis against iron deficiency during the period of greatest incidence, from 6 to 18 months of life. Some special indications for use are following placental or traumatic blood loss, for prematures and twins, for the pallid, irritable, anorectic infant with an unsatisfactory blood picture and following prolonged infection or diarrhea.

SANBORN COMPANY Ballroom
Waltham, Massachusetts Booth 12

Exhibiting the latest in Sanborn precision Electrocardiographs. The Sanborn Viso Cardiette 100 and 100M, Sanborn Visette 300 18 pounds portable, Sanborn Twin Beam 62 Phonocardiograph and the Rappaport-Sprague Acoustic Stethoscope.

SANDOZ PHARMACEUTICALS Ballroom
Hanover, New Jersey Booth 29

Sandoz Pharmaceuticals cordially invites you to visit our display at booth No. 29.

Mellaril the first selective phenotiazine exhibiting potent tranquilizing activity without anti-emetic action. The greater toleration, notably relative absence of extra pyramidal symptoms, enhances its usefulness in management of major and minor emotional disorders.

Plexonal preferred daytime sedative-relaxant.

Syntocinon—Nasal Spray—New—Syntocinon Nasal Spray for intranasal application of synthetic oxytocin (Syntocinon). Activates the milk-ejection reflex to stimulate milk let-down. Overcomes some of the complications associated with lactation, e.g., engorged, painful, tender or distended breasts due to milk retention and stasis or the circumscribed, painful induration of incipient mastitis. Accelerates involution of the uterus.

Any of our representatives in attendance, will gladly answer questions about these and other Sandoz products.

W. B. SAUNDERS COMPANY Sunset Room
Philadelphia, Pennsylvania Booth 52

New Saunders books published this year include clinical volumes: Edwards: An Atlas of Acquired Diseases of the Heart; Beckman: Pharmacology; Huffman: Gynecology and Obstetrics; Pillsbury: Cutaneous Medicine; Nagan: A Medical Almanac; and the new Current Therapy 1961.

SCHERING CORPORATION Sunset Room
Bloomfield, New Jersey Booth 56

Schering Corporation welcomes the members of the California Medical Association. Our representatives cordially invite you to visit the Schering technical exhibit where they will be glad to discuss with you the recent therapeutic advances in Schering research. Products featured will be: Rela, a new muscle relaxant-analgesic that eases sprains, strains and low back pains; Naqua, effective new oral diuretic—and anti-hypertensive; Alpen, the new synthesized oral penicillin; and Fulvicin, the first oral antifungal antibiotic for ringworm.

SCHIEFFELIN & CO. Sunset Room
New York, New York Booth 65

Schieffelin & Co. is exhibiting several products of importance and interest. Neo-Resulin-F offers four pronged action for acne therapy; Hydro-Tar affords the patient a therapeutic combination of crude coal tar and hydrocortisone.

Also of interest to the attending physician is Estivin. Estivin is the ophthalmic preparation suggested for hay fever and other minor ocular irritations.

In addition, C.R.P.A. (C-Reactive Protein Antiserum, Schieffelin) will be demonstrated. C.R.P.A. offers the physician an easy diagnosis for hidden inflammation. Hemoccult, the new standard for detection of occult blood, will also be demonstrated.

Professional representatives for Schieffelin & Co. will be at your service to discuss the above mentioned products, as well as other products under clinical evaluation and research.

JULIUS SCHMID, INC. Sunset Room
New York, New York Booth 59

An interesting and informative exhibit featuring Immolin Vaginal Cream-Jel for use without a diaphragm; Ramses Flexible Cushioned and Bendex Diaphragms; Ramses Vaginal Jelly; Vagisec Jelly and Liquid for vaginal trichomoniasis therapy; and XXXX (Fourex) Skin Condoms, Ramses, Sheik and Esquire Rubber Condoms for the control of trichomonal reinfection.

G. D. SEARLE & CO. Ballroom
Chicago, Illinois Booth 25

You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle Products of Research.

Featured will be our products Aldactone, Enovid, and Nilevar.

SHELLEY PROFESSIONAL PRODUCTS, INC. Boulevard Room
Los Angeles Booth 86

SHERMAN LABORATORIES Boulevard Room
Detroit, Michigan Booth 111

Severe asthmatic attacks are not merely relieved, but *terminated* in 10 to 20 minutes by Elixophyllin, given orally. In milder attacks, its speed has been described as "instantaneous."

Wheezing, retrosternal congestion and coughing caused by bronchospasm are usually relieved in 15 minutes following a dose of 45 cc. of Elixophyllin.

Vital capacity increases were noted as soon as 5 minutes after administration. Pick up these data and reports on their clinical significance at the Sherman booth.

SMITH KLINE & FRENCH LABORATORIES Ballroom
Philadelphia, Pennsylvania Booth 28

SK&F features (1) new 'Coplexen' Liquid, for symptomatic control of the cold complex in children; (2) Ornade Spansule capsules, the unique oral nasal decongestant for symptomatic treatment of upper respiratory distress; (3) Eskatrol Spansule capsules, for daylong control of appetite and relief of the psychic stress that causes overeating; (4) Stelazine 2 mg. Tablets, a specific antianxiety agent that helps restore emotional stability without soporific effect; and (5) Combid Spansule capsules, for comprehensive control—psychic as well as physical—of the patient with ulcer, g.i. spasm and other gastrointestinal disorders. Our representatives welcome the opportunity to discuss these and other SK&F products with you.

SMITH, MILLER & PATCH, INC. Ballroom
New York, New York Booth 8

Smith, Miller & Patch, Inc., N. Y., N. Y.—Features Trulase . . . the only chewable digestive aid designed to prevent pain and discomfort of gas and distention due to indigestion. Acts physiologically without delay. Contains three essential enzymes, standardized to assure dependable activity.

Vitron-C . . . a new oral hematinic, ferrous fumarate with ascorbic acid. Vitron-C has been clinically proven to be effective in treating iron deficiency anemia in patients with gastrointestinal irritability, or ulcerative disease. A chewable pleasantly flavored sugar-free tablet that offers iron with maximum toleration.

Bistrimate—A safe, effective and economical therapeutic to combat subacute, chronic or recurrent sore throats. Preliminary tissue studies indicate Bistrimate has an antiviral effect on Adenovirus type 3 and Adenovirus type 7.

E. R. SQUIBB & SONS Ballroom
New York, New York Booth 10

J. W. STACEY, INC. Ballroom Foyer
Palo Alto Booth 7

Stacey's, established for over 35 years, provides the doctor in the West with a source of supply of all medical books. At booth No. 7 you will find on display the latest books in medicine, surgery, and the specialties. You are invited to browse at your leisure.

THE STUART COMPANY Ballroom
Pasadena Booth 17

A cordial invitation is extended to all members and guests attending this meeting to visit the Stuart Company booth. Specially trained representatives will be in attendance to answer your questions on new products developed in our new and modern laboratories which have received international acclaim.

SWIFT & COMPANY Boulevard Room
Chicago, Illinois Booth 89

A complete line of Swift's all-meat varieties—the economical forms of meat protein for infant feeding—plus egg yolk products and high Meat Dinners—for your infant patients, are exhibited at the Swift Booth. We invite your questions regarding the results of clinical studies, sponsored by Swift, investigating the role of meat in the infant diet. Reprints of these studies are available. You may also obtain copies of our attractively illustrated booklet for distribution to mothers.

TESTAGAR & CO., INC. Boulevard Room
Detroit, Michigan Booth 83

The professional service representatives of Testagar & Co., Inc. will be happy to pass on the latest information on the use of Heparin Sodium (Hepathrom) as an office procedure in the treatment of acute and chronic atherosclerotic conditions; as a treatment for peripheral artery diseases. Information is also available on the use of Heparin (Hepathrom) as a prophylactic in coronary artery diseases. Information, samples and literature will also be available on Felsules (Chloral Hydrate-Fellows). The latest literature stresses the value of chloral hydrate in the geriatric patient.

TRU-EZE MFG. CO., INC. Ballroom Foyer
Burbank Booth 5

Demonstrating the "Tractomatic" portable intermittent traction machine. Adaptable to vertical cervical traction or horizontal cervical and lumbar traction.

Also showing the New "Tru-Trac" RT-99 Traction and Therapy Table. Split in two sections: lumbar section operates on ball-bearing rollers, cervical traction at any angle up to 45 degrees.

For the profession with limited office space see the "Tru-Trac" Flexion Traction Chair. Traction at any angle up to 45 degrees providing definite *Flexion.*

Improved traction sets for home use, supplementing office treatment and aiding in earlier hospital release.

U. S. VITAMIN & PHARMACEUTICAL CORPORATION Boulevard Room
New York, New York Booth 113

DBI—new "full-range" oral hypoglycemic agent. DBI, brand of phenformin (N^1-B-phenethylbiguanide HCl) is distinctly different in chemical structure and physiological action from the oral hypoglycemic sulfonylureas. It effectively lowers blood sugar and eliminates glycosuria in mild, moderate and severe diabetes. DBI, in combination with insulin, improves regulation of "brittle" adult and juvenile diabetes. In juvenile diabetes, DBI often permits up to 50 per cent reduction in insulin requirement. Also effective in the insulin-resistant, and in primary and secondary tolbutamide and chlorpropamide failures. Full details available.

THE UPJOHN COMPANY Boulevard Room
Kalamazoo, Michigan Booth 98

Professional representatives of The Upjohn Company are eager to contribute to the success of your meeting. We are here to discuss with you products of Upjohn research that are designed to assist you in the practice of your profession. We solicit your inquiries and comments.

WALKER LABORATORIES Boulevard Room
Mount Vernon, New York Booth 112

WALLACE LABORATORIES Ballroom
Cranbury, New Jersey Booth 11

WAMPOLE LABORATORIES Sunset Room
Stamford, Connecticut Booth 60

Hyptran, the new, dual release hypnotic-tranquilizer designed to insure a full night's restful sleep without loss of mental acuity the following morning.

Organidin, the unique organically bound iodine useful as a mucolytic and expectorant without the side effects normally seen in conjunction with iodide therapy. In addition to Organidin Solution and Tablets, samples and literature will be available on Organidin Elixir, the new dosage form of Organidin.

Rectalad Enema, the unique truly miniature enema useful in triggering the defecatory reflex to stimulate prompt emptying of the lower bowel. Useful pre- and postoperative, pre- and postdelivery and in the solution of problems associated with occasional constipation.

VoSoL Otic Solution, for the treatment and prevention of Otitis Externa. VoSoL Otic Solution is virtually 100 per cent effective against all organisms commonly encountered in Otitis Externa. VoSoL is both bactericidal and fungicidal yet contains no antibiotics or sulfonamides.

WARNER-CHILCOTT LABORATORIES, INC. Boulevard Room
Morris Plains, New Jersey Booth 93

Gelusil—the physician's antacid—for the relief of gastric hyperacidity and management of peptic ulcer. Provides two protective coating gels for prompt, prolonged relief of pain. Gelusil is all antacid in Action—is non-constipating, contains no laxative.

Peritrate—A long-acting coronary vasodilator for patients with coronary artery disease—whether angina pectoris or coronary occlusion. Peritrate improves coronary blood flow, thereby increasing collateral circulation, with no significant change in blood pressure or pulse rate. Smooth onset of action virtually eliminates nitrate headache.

THE WARREN-TEED PRODUCTS CO. Boulevard Room
Columbus, Ohio Booth 79

The Warren-Teed Products Company will feature four pharmaceutical specialties at their exhibit booth.

Ilopan-Choline Tablets—Oral therapy for relief and treatment of gastrointestinal gas retention in ambulatory patients.

Ilopan—An injectable d-pantothenyl alcohol for the treatment and prevention of postoperative gastrointestinal distention.

Modane—A deconstipant for relief and rehabilitation of the atonic bowel.

Kaon—An extremely palatable and well-tolerated oral potassium.

Warren-Teed representatives cordially welcome all registrants to visit their display.

WESTERN SURGICAL SUPPLY CO. Boulevard Room
Los Angeles Booth 103

This exhibit will consist of the latest innovations in medical care. Both equipment and new disposable products which will increase the efficiency of the medical field will be shown.

WESTWOOD PHARMACEUTICALS Boulevard Room
Buffalo, New York Booth 88

Westwood invites physicians to stop by their booth to discuss their unique dermatological products:

Fostex Cream, Fostex Cake, Lowila Cake, Lowila Emollient, Sebulex, Fostril, Alpha-Keri.

These products are particularly suitable for personal use by physicians and their families who may be plagued with dandruff, acne, dry and itchy skin, and sensitivities to soap. Register, so that we may send prescription units to your home.

WHITE LABORATORIES Ballroom
Kenilworth, New Jersey Booth 27

WINTHROP LABORATORIES Sunset Room
New York, New York Booth 54

Alvodine, new potent narcotic analgesic that relieves pain without causing drowsiness or hypnosis (in over 90 per cent of patients). Especially well suited for postoperative use, for pain from cancer, angina, cholecystitis, pleurisy, myocardial infarcting; also for preoperative preparation and as a supplement to anesthesia. Alvodine is highly effective orally as well as parenterally. Alvodine is available in scored tablets of 50 mg. and ampuls of 20 mg. (1 cc.), subject to Federal Narcotic Law.

WOODSIDE ACRES Boulevard Room
Redwood City Booth 82

Woodside Acres Hospital, exclusively for the treatment of alcoholism. Conditioned Response Therapy method based on the theory that alcoholism is predominantly a physiological demand for alcohol.

WYNN PHARMACAL CORPORATION Boulevard Room
Philadelphia, Pennsylvania Booth 90

Information, samples and reprints will be available on Quinaglute Dura-Tab S.M., the only oral Sustained Medication Quinidine Gluconate. Studies show that q. 12 h. dosage maintains effective quinidine blood levels all day and all night—so no night dosage is needed. Quinidine gluconate is well tolerated by the g.i. tract compared to the sulfate because it is ten times as soluble. With Quinaglute Dura-Tab S.M. valleys in plasma blood levels where arrhythmias tend to recur are virtually eliminated. Indicated in atrial fibrillation, flutter, premature contractions, auricular tachycardia, etc.

Also available will be information and samples of Aminophylline Dura-Tab S.M., Wynn's exclusive brand of sustained medication aminophylline tablets.

EMERGENCY CALLS AND MESSAGES

Convention Emergency Call Number: DUnkirk 1-2191—8:30 a.m. to 5:00 p.m.

(*Provided through the courtesy of the* Pacific Telephone and Telegraph Company)

Each physician should notify his own secretary regarding the *exact* section he plans to attend and the time of his attendance, and the *convention telephone number*. It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, HUbbard 3-1581.

CALIFORNIA
MEDICAL
ASSOCIATION

Annual Reports

OFFICERS, COMMISSIONS AND COMMITTEES

for

YEAR 1960

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OFFICERS AND DELEGATES

General Officers

Paul D. Foster, Los Angeles	President
Warren L. Bostick, San Rafael	President-Elect
James C. Doyle, Beverly Hills	Speaker of House of Delegates
Ivan C. Heron, San Francisco	Vice-Speaker of House of Delegates
Samuel R. Sherman, San Francisco	Chairman of Council
Matthew N. Hosmer, San Francisco	Secretary
Dwight L. Wilbur, San Francisco	Editor
John Hunton	Executive Secretary
Howard Hassard	Executive Director
Peart, Baraty & Hassard	Legal Counsel

House of Delegates

TOTAL DELEGATES (405)

DELEGATES EX-OFFICIO (42)

Paul D. Foster, Los Angeles	President
Warren L. Bostick, San Rafael	President-Elect
James C. Doyle, Beverly Hills	Speaker of House of Delegates
Ivan C. Heron, San Francisco	Vice-Speaker of House of Delegates
Samuel R. Sherman, San Francisco	Chairman of Council
Matthew N. Hosmer, San Francisco	Secretary
Dwight L. Wilbur, San Francisco	Editor

COUNCILORS

James C. MacLaggan (1961)	First District
Omer W. Wheeler (1961)	Second District
Malcolm C. Todd (1962)	Office No. 1, Third District
William F. Quinn (1963)	Office No. 2, Third District
J. Norman O'Neill (1961)	Office No. 3, Third District
Arthur A. Kirchner (1962)	Office No. 4, Third District
Joseph P. O'Connor (1963)	Office No. 5, Third District
Gerald W. Shaw (1961)	Office No. 6, Third District
Wilbur G. Rogers (1962)	Office No. 7, Third District
James W. Dalton (1961)	Fourth District
John F. Murray (1963)	Fifth District
Burt L. Davis (1961)	Office No. 1, Sixth District
Albert G. Miller (1962)	Office No. 2, Sixth District
Samuel R. Sherman (1963)	Office No. 1, Seventh District
Donald M. Campbell (1961)	Office No. 2, Seventh District
John G. Morrison (1963)	Eighth District
Carl E. Anderson (1961)	Ninth District
Ralph C. Teall (1962)	Tenth District

ELECTED DELEGATES (358)

Delegates	*Alternates*
Alameda-Contra Costa County (30)	
Anderson, Charles	Adams, Robert
Attwood, C. J.	Baker, Edward
Bagley, Richard	Black, Daniel
Bassett, J. Brandon	Bogart, William
Bell, Dudley P.	Boulware, John
Benson, K. W.	Brock, Kurt
Cronenwett, Paul	Brown, Lawrence E.
Dimmler, Charles	Cannon, Lawrence
Dodds, Donald	Charvet, Leonard
Dozier, Thomas J.	Cobb, B. Otis
Dugan, David	Cope, J. Hallam
Ellis, Grant	Harms, Herbert E.
Etheredge, Samuel	Hart, Charles
Fraser, L. H.	Holden, Herbert
Gadwood, Bernard B.	Hoskins, H. Dean
Gersten, Samuel	Johnston, Ian
Hart, Melvin	Keig, William C.
Harvey, Harold	Kerns, Claude
Henderson, Ernest	Lamb, Gordon
Hudson, Charles	Mutch, William
Johnson, Richard	Page, William
Kay, Harold	Powell, Oscar
Kirk, Ralph	Rihn, Richard
Leet, Robert S.	Ross, Joseph
Maloney, Harold P.	Simon, Daniel
Peterson, H. Harvey	Smith, C. Reed
Richards, Dexter, Jr.	Taines, Robert
Royce, Byron	Twiss, Arthur
Truman, Stanley R.	Weeden, William
Tucker, Dan	Whiting, E. Gale
Butte-Glenn County (2)	
Elmendorf, Thomas	Chiapella, Karl J.
Lawrence, W. Sherwood	Murphy, Franklin L.

Delegates	*Alternates*
Fresno County (6)	
Argo, W. L.	Gray, Clell C., Jr.
Fulmer, Harlan	Hollingsworth, J. B.
Hongola, R. I.	Ludwig, Charles
Howard, Arthur F.	Polhemus, J. A.
Kass, Robert	Snyder, L. J.
Smith, Robb	Steinbach, Owen
Humboldt-Del Norte County (2)	
Eley, James S.	Henderson, Justus
Olson, Fred A.	Loring, Theodore
Imperial County (2)	
Irwin, Willis	Jaquith, George
Schoensee, Burke E.	Wallace, Alejandro
Inyo-Mono County (2)	
Curtis, C. C.	Denton, Robert W.
Scott, C. L.	Zimmerly, Winfred
Kern County (5)	
Day, Robert L.	Cunningham, Ralph
Forney, Robert L.	Ellis, John F.
Patrick, Robert A.	Osell, Levin N.
Strongin, Seymour	Reese, Thomas V.
Vaughan, J. E.	Seibly, J. S.
Kings County (2)	
Chamlee, William F.	Barreiro, A. L.
Christensen, L. F.	Smith, James A.
Lassen-Plumas-Modoc County (2)	
Bross, Willard S., Jr.	Batson, Wilbur C.
Burnett, C. I.	Quinn, William J.

Delegates	*Alternates*
Los Angeles County (141)	
Abbey, John D.	Allen, Browning E., Jr.
Albaugh, Clarence H.	Alter, Marvin S.
Alesen, Lewis A.	Anderson, John R.
Andrews, Herbert J.	Anderson, William R.
Asher, Leonard M.	Andler, Maxwell M.
Baers, Harry A.	Arcadi, John A.
Bailey, Wilbur	Attyah, Albert M.
Baker, Francis J.	Barber, Clifford A.
Barker, Donald E.	Beckner, George L.
Barnes, Roger W.	Bishop, Edwin T.
Barry, Donald J.	Blong, Peter H.
Barton, Jackson A.	Bodensteiner, Cletus H.
Bateman, J. Gordon	Bodner, Henry
Beasom, Ralph D.	Bourne, John L., Jr.
Beatty, Geneva	Boyd, Harold
Beebe, Edson D.	Boyle, Joseph F.
Bennett, Ralph L.	Brayton, Donald F.
Bills, Jack W.	Brennan, John C.
Blackmun, Robert L.	Brown, George E.
Boehme, Earl J.	Bullis, John A.
Bradford, Fred E.	Cardey, Norman L.
Briney, Allan K.	Case, Walter G.
Buehler, George S.	Cass, Donald
Bullock, Lewis T.	Cobley, George G.
Carter, Robert V.	Cole, Clifford B.
Cherry, Ian S.	Cole, Seymour L.
Cobb, Dudley M., Jr.	Compton, Richard B.
Conti, James G.	Crowe, Harold E.
Cook, Eugene Lee	Cruse, Donald R.
Cook, Wells C.	Doran, S. Mark
Cosgrove, Jay B.	Doyle, Patrick J.
Coumbe, Jay E.	Dresser, James T.
Craig, Lyle G.	Eder, David
Crane, Edward H., Jr.	Ellerbroek, Wallace C.
Crane, Jay J.	Ermini, Eugene D.
Crowl, Verne C.	Evans, William D.
Doehring, Paul C.	Failing, Joseph H.
Donath, Douglas	Fishel, Howard E.
D'Orazio, Edward	Fowler, John D.
Dorn, Robert M.	Frantz, Kieffer E.
Doyle, James C.	Frempter, George R.
Dummer, Jerome	Fusco, John A.
Earl, Donald H.	Gamble, Thomas J.
Einstein, Robert A. J.	Garvin, Harold W.
Eisele, Harold E.	Gelfand, Leo
Ekstrom, Carl F.	Gilbert, Wallace G.
Ewing, John Paul	Glazier, McCleery
Fitch, Donald R.	Gondek, Frank R.
Foster, P. A.	Goodwin, William E.
Frie, Robert James	Gray, F. Lyle
Gates, Earl F.	Grimaud, Harry J.
Gettelman, Eugene	Hadley, Russel C.
Gill, Charles C.	Haller, Austin P.
Glyn-Davies, Alex	Hanchett, Richard B.
Golden, Robert F.	Hanten, Stephen J.
Gooel, Elmer F.	Hare, Robert
Gummess, Glen H.	Harlan, Mahlon M.
Gunther, Lewis	Harris, George S.
Haining, Robert B.	Haskell, M. M.
Halasey, Thomas	Hastings, T. Newlin
Ham, Franklin F.	Hayes, Edward W., Jr.
Hamilton, John B.	Hertzog, Francis C.
Hartley, Philip B.	Hohl, Mason
Haschka, August J., Jr.	Huffman, L. Dale
Heiser, Saul	Hutter, Charles G.
Hickey, N. Glenn	Irwin, Ralph L.
Hill, Lowell R.	Isaacs, Julien H.
Hoffman, Eugene F.	Jackson, Donald W.
Holloway, James W.	Johnstone, Marshall W.
Hood, Robert T.	Kahlstrom, Samuel C.
Kaplan, Louis H.	Kaiser, J. Emil
Kempf, Paul Ruben, Jr.	Kalivas, George P.
Kidd, Thomas R.	Kantola, Bennett W.
King, Donald R.	Kelso, Raymond W., Jr.
Klingbeil, Jerome R.	Kirchner, Herbert J.
Knox, Stuart C.	Klemes, Marvin A.
Kuntz, George S.	Knox, John F.
Kuris, David B.	Kramer, Jack
LaForge, William C.	Lazarus, Maurice L.
Laughlin, T. Jackson	Linsman, Joseph F.
Leffingwell, F. E.	Lopez, Charles J.
Lloyd, O. Dale	Mack, Edward G.
Loopesko, Eugene	Mack, Marvin A.
Ludwig, J. Lafe	Mark, Jerome S.
Lynn, Theodore A.	Mason, Christopher A.
Macdonald, Ian	Masters, John B.
Matlock, Richard A.	McGirr, John I., Jr.
Mauer, Edgar F.	McLennan, Robert M.
Mayne, John C.	Mercer, Marshall M.
McCleery, Walter S.	Metson, Bates F.
McDowell, Allyn J.	Mietus, A. C.
McNeil, Robert J.	Morales, Fernando
McVann, Robert M.	Morgan, Frank M.
Michels, Arthur G.	Morrell, Charles F.
Miller, Richard D.	Mulford, Todd M.
Milliken, Ralph M.	Nickel, Vernon L.
Mooney, Herbert S.	O'Neil, Mervin B.
Morgan, Henry G.	Pabst, Paul J.
Mortensen, Elmer S.	Pallette, Edward C.
Mumler, William C.	Palmer, Jay J.
Murrieta, A. J., Jr.	Peeke, George O.
Neale, Roderick M.	Plimpton, Edwin B.
Los Angeles (continued)	
Neuenschwander, R. S.	Pollack, John V.
Nixon, Richard W.	Randle, Robert E.
Nugent, Maurice W.	Reeder, David H.
Oetting, Henry K.	Rolland, Ward M.
Parks, Ross V.	Rosenbloom, Nathan
Paxton, Frank F.	Rouff, Elliot A.
Penn, Sidney W.	Rubin, Herbert B.
Petersen, Harold E.	Schade, Frank F.
Pettit, Richard D.	Schimmel, Irwin
Pheasant, Homer C.	Scuderi, S. A.
Polito, S. Robert	Sheldon, David B.
Quinn, William F.	Slater, James L.
Randall, Morton H.	Smith, Thayer A.
Richards, Melvin R.	Soper, H. Vern
Rogers, Frank A.	Starr, Charles M.
Rolf, Bruce B.	Starr, Harvey E.
Romeo, Matthew P.	Statman, Solomon H.
Sampson, J. Philip	Steffen, Charles G.
Schroeder, Ralph L.	Stephens, John S.
Senseman, William R.	Stout, Carlyle F.
Sleeter, John W. H.	Taw, Richard L.
Smart, Reginald H.	Thom, John G.
Smith, Earl H.	Thompson, W. B., Jr.
Smitter, Robert C.	Thurber, Packard, Jr.
Sommer, Melvin L.	Treible, Dale P.
Stirrett, R. L.	Turbow, Arthur O.
Stout, Joseph H., Jr.	Turnbull, Fred M., Jr.
Tyroler, Frederic N.	Tyler, George C.
Van Dyke, H. Milton	Van Riesen, Milton H.
Ward, George H.	Wallace, Keith H.
Watson, Robert L., Jr.	Watson, Price T.
Weber, Robert A.	Watson, Robert Webster
Weekes, Leroy R.	Westphal, Edward A.
Weeks, William F.	Wilcox, John C.
Wieman, Walter H.	Wilkins, Harold E.
Wilson, Warren A.	Wood, Robert C.
Witherbee, Harold R.	Wunderlich, Edwin
Wood, Howard A.	Young, H. Mark
Woodruff, John H., Jr.	Zaro, John A., Jr.
Madera County (2)	
Daggett, Gilbert G.	Rowe, R. B.
Solberg, L. A.	Weinberger, Herbert
Marin County (4)	
Arons, Joseph J.	Hedin, Roger W.
Degenhardt, Ira	McGee, John
Manwaring, John H.	Schell, Robert
Smart, William	West, Robert C.
Mendocino-Lake County (2)	
Hill, Thomas P.	Curtis, Hugh P.
Smalley, Robert B.	Roberson, B. B.
Merced County (2)	
McDowell, B. E.	Holm, Richard P.
Medefind, J. N.	Udall, Addison R.
Monterey County (4)	
Clark, Howard E.	Hull, Osman H.
Englehorn, T. D.	Shebl, Joseph J.
Mitchell, Allen C.	Turner, Joseph E.
Moore, Chester G.	Turner, Seymour
Napa County (2)	
Brignoli, Walter H.	Ashley, Robert C.
Rose, Edgar Kash	Hemphill, Arthur C.
Orange County (12)	
Altman, Richard F.	Ball, Dexter T.
Donaldson, A. Norton	Ball, Robert E.
Galbraith, Harold F.	Gerrie, Wallace A.
Gendel, Samuel	Kornblum, William A.
Hanigan, Thomas E.	Lowe, Waynard W.
Hunt, Frederick T.	Mackey, Francis G.
Paul, Carl J.	McAllister, Cloyd N.
Pettis, Emmett M.	O'Brien, Frank T.
Price, J. B.	Plumb, Hugh J., Jr.
Struve, Edgar E.	Preston, Richard A.
Whittaker, L. F.	Specht, Oswald S.
Wilson, L. E.	Wineland, Richard E.
Placer-Nevada-Sierra County (2)	
Dubin, Nathan	Kindopp, D. M.
Joye, K. M.	Smith, F. Lynn
Riverside County (5)	
Abbott, Donald	Fitzmorris, Andrew
Batzle, J. Harold	Ivanoff, John
Garcia, Robert E.	Peterson, John R.
Hamilton, Van	Stone, Vean M.
Stone, H. H.	
Sacramento County (9)	
Berman, A. E.	Berg, John
Dozier, Dave F.	Cook, Orrin S.
Grayson, Charles E.	Demorest, Byron H.
Harding, William F. B.	Dowrie, James O.
Hickey, William C.	Janvier, Joel T.
Horn, Carl E.	Range, Robert L
Martin, James W.	Ripple, Richard
Pope, Glenn A.	Schroeder, Fred
Yant, James H.	Wright, Carleton C.

San Benito County (2)

Delegates	*Alternates*
Moore, Ernest	Haruff, John J.
Taylor, Kent	Quinn, Robert D.

San Bernardino County (7)

Delegates	*Alternates*
Coughlin, John H.	Cover, William L.
Hadley, Carl M.	Crutcher, Luke
Martin, J. Needham	Halburg, C. T.
Melone, Frank C.	Hoag, L. G.
Miano, Ben D. A.	Marsh, Norman E.
Sprague, Charles P.	Ogden, Wendell L.
Varden, Arthur E.	Vargas, Roger A.

San Diego County (18)

Delegates	*Alternates*
Carpenter, Walter F.	Averill, Roy S.
Fairchild, L. H.	Bethard, William F.
Feeney, Michael J.	Brumbaugh, Simon C., Jr.
Hall, Winston C.	Franklin, Roland G.
Hanna, Curtis M.	Heywood, Charles W.
Hokr, William K.	Hippen, Robert L.
Irwin, James B.	Merdinger, Walter F.
Isenhour, Roger C.	Messenger, Harold M.
King, Ralph M.	Miller, David
Levy, Edward I.	Moore, Stanley A.
Moore, A. E.	Peck, J. Haddon A., Jr.
Newman, Willard H.	Peck, Samuel G.
Phalen, James R.	Plumb, Robert T.
Robinson, Frank H.	Powell, E. R.
Rumsey, John M.	Pruett, Charles E.
Skeoch, Gordon D.	Rumsey, Eugene W.
Tancredi, Chester	Tabor, George L., Jr.
Telford, Joseph W.	Youel, Milo A.

San Francisco County (34)

Delegates	*Alternates*
Beckh, Walter	Bailly, T. Edward, Jr.
Bonfilio, Nicholas D.	Castro, Amos J.
Burnham, DeWitt K.	Cohn, Bradford P.
Callaway, Claude P.	Cook, Robert E.
Campbell, Douglas G.	Cowan, John F.
Clark, Albert G.	Cron, Heinz E.
Clark, W. Dayton	Danno, Dorothy P.
Combs, Robert C.	Fitzgerald, William J.
Cox, Francis J.	Foster, Sidney E.
Fenlon, Roberta	Furlong, Joseph J.
Fraser, Alexander F.	Gallagher, Donald M.
Galgiani, John	Gobar, Robert F.
Garland, L. Henry	Greco, Vincent H.
Gibbons, Henry, III	Hartwig, Arthur R.
Herzog, George K., Jr.	Henry, Margaret
Hurwitz, Samuel	Herrod, Chester
Leach, Charles W.	Hopp, Eugene S.
Lebo, Charles	Jacobs, Alvin H.
Musser, Don C.	Long, Albert E.
Olney, Mary B.	McGregor, Mar W.
Pillsbury, Philip L.	Newsom, William A.
Rixford, Emmet L.	O'Gara, Louis A.
Robinson, Saul J.	Palmer, Richard
Rochex, Francis	Pearl, Felix
Saunders, John B. de C. M.	Salomon, Maurice S.
Schaupp, John B.	Sanazaro, Paul J.
Schaupp, Karl L., Jr.	Schaefer, Jane
Sirbu, Abraham B.	Strange, Vance M.
Watts, Malcolm S. M.	Talbott, Grace M.
Wayburn, Edgar	Thompson, James H.
Webb, Eugene M.	Thompson, Mary C.
Weyrauch, Helen B.	Trauner, Lawrence M.
Willett, Forrest M.	Wagner, William F.
Williams, A. Justin	Webb, Gilbert A.

San Joaquin County (4)

Delegates	*Alternates*
Armanino, Louis P.	Blinn, John F., Jr.
Benn, James J.	Lee, Dora Ames
Mayo, John F.	McNally, John T.
Noetling, Paul R.	Powell, James R.

San Luis Obispo (2)

Delegates	*Alternates*
Hardham, John	Scow, James
Middleton, Joseph G.	Tedone, L. M.

San Mateo County (10)

Delegates	*Alternates*
Brown, Henry A.	Armstrong, Charles D.
Findley, John W.	Hart, Ward L.
Fox, Norman C.	Healy, Francis A.
Hills, Oscar W.	James, Robert E.
Holmes, Robert O.	Lindsey, Howard W.
Novak, Frank J.	Manry, Clayton H.
Ray, Hartzell H.	Moore, Ferrall H.
Saidy, John T.	Richanbach, Henry S.
Smith, Harry F.	Rossiter, Stanford B.
Thompson, William H.	Willey, Roger W.

Santa Barbara County (4)

Delegates	*Alternates*
Freidell, H. Vernon	Alexander, Harold
Miles, Harold	Heiges, Laurence, Jr.
Olsen, Arthur	McNiece, Kenneth
Riparetti, P. Paul	Williams, Robert

Santa Clara County (15)

Delegates	*Alternates*
Boice, Clyde	Bacci, Orval J.
Burchfiel, Robert	Besson, Gerald
Cary, J. Alison	Cramer, Harold
Clark, William H.	Kaufman, S. Fred
Dennis, Robert	Kelly, Allen
Elmore, Ernest F.	Kenter, Thomas P.
Foster, Thomas N.	LaVeque, Edgar G.
Fox, Leon P.	Meyer, Robert W.
Houck, George H.	Peck, Clemmer M.
Liston, Edward	Rugtiv, George M.
Mitchell, Sidney	Schilla, Frederick
Morton, Paul V.	Silver, Emmanuel
Olson, Raymond N.	Skillicorn, Stanley A.
Scarborough, C. Gerald	Wheat, Richard
Snyder, J. Frederic	Zobel, Jerome

Santa Cruz County (2)

Delegates	*Alternates*
Newhall, Luther	Cress, William
Spencer, James A.	Crompton, Robert

Shasta-Trinity County (2)

Delegates	*Alternates*
Martin, George A.	Fulton, Lee D.
Miller, Charles D.	Nilssen, William, Jr.

Siskiyou County (2)

Delegates	*Alternates*
Bayuk, R. W.	Newton, A. H.
Reynolds, J. W.	Vidricksen, H. L.

Solano County (2)

Delegates	*Alternates*
Garrett, Robert L.	Joseph, Herbert L.
Jones, F. Burton	Schmutz, Melvin A.

Sonoma County (3)

Delegates	*Alternates*
Newman, William J.	Panting, Norman
Robbins, R. Dee	Salmon, Everett L.
Sharrocks, Horace F.	Zieber, R. L.

Stanislaus County (3)

Delegates	*Alternates*
Hatch, Francis N.	Deyoe, George W.
Mew, David J.	Pyles, Gordon
Purvis, Robert	Ryan, William H.

Tehama County (2)

Delegates	*Alternates*
Ingle, G. W.	Frey, Russell G.
Wolfe, L. E.	Wilson, E. R.

Tulare County (2)

Delegates	*Alternates*
Feldmayer, James E.	Lavers, George
Karstaedt, Robert	Miller, Ralph N.

Ventura County (2)

Delegates	*Alternates*
Helbling, Franklin K.	Huff, W. Cloyce
Moore, J. W.	Nelson, James H.

Yolo County (2)

Delegates	*Alternates*
McKinney, Charles L.	Kennedy, James
Young, Corbin	Robinson, William

Yuba-Sutter-Colusa County (2)

Delegates	*Alternates*
Heckman, John R.	Bradley, Herbert W.
Wallace, Robert	Williams, James D.

PAST PRESIDENTS (22)

Ewer, Edward N.	1925
Harris, Junius B.	1931
Reinle, George G.	1933
Peers, Robert A.	1935
Wilson, Harry H.	1940
Molony, William R., Sr.	1942
Schaupp, Karl L.	1943
Goin, Lowell S.	1944
McClendon, Sam J.	1946
Cline, John W.	1947
Askey, E. Vincent	1948
Kneeshaw, R. Stanley	1949
Cass, Donald	1950
MacLean, H. Gordon	1951
Alesen, Lewis A.	1952
Green, John W.	1953
Morrison, Arlo A.	1954
Shipman, Sidney J.	1955
Charnock, Donald A.	1956
MacDonald, Frank A.	1957
West, Francis E.	1958
Reynolds, T. Eric	1959

House of Delegates Agenda

1961 Annual Session

Embassy Room, Ambassador Hotel

Speaker	James C. Dayle, Beverly Hills
Vice-Speaker	Ivan C. Heron, San Francisca
Secretary	Matthew N. Hasmer, San Francisco

FIRST MEETING

Saturday, April 29, at 3:00 p.m.

(To be recessed and reconvened at 9:30 a.m., Sunday, April 30)

Order of Business

1. Call to order.
2. Report of Committee on Credentials, and Organization of the House of Delegates.
3. Roll call.
4. Announcement and approval of Reference Committees.
    (a) Committee on Credentials. (Delegates must register with the Committee.)
    (b) Reference Committee on the Reports of Officers, the Council, the Commissions, and Standing and Special Committees. (Reference Committee No. 1.)
    (c) Reference Committee on Finance, to review the reports of the Secretary and the Executive Secretary and to study and make recommendations to the House of Delegates on the budget submitted by the Council and the amount of dues for the ensuing year. (Reference Committee No. 2.)
    (d) Reference Committee on Resolutions and New and Miscellaneous Business. (Reference Committee No. 3.)
    (e) Reference Committee (No. 3A) on Resolutions and New and Miscellaneous Business.
    (f) Reference Committee on Amendments to the Constitution and By-Laws. (Reference Committee No. 4.)
    (g) Reference Committee on C.P.S. Business.
5. Address by President of the Woman's Auxiliary to the C.M.A.—Mrs. Samuel Gendel, Anaheim.
6. Address by President Paul D. Foster—Presentation of 50-Year Awards.
7. Miscellaneous announcements by the Speaker. (Stenographic service to secure copies of resolutions, etc.)
8. Report of the President—Paul D. Foster.
9. Report of the President-elect—Warren L. Bostick.
10. Report of the Speaker of the House of Delegates—James C. Doyle.
11. Report of the Vice-Speaker of the House of Delegates—Ivan C. Heron.
12. Report of the Trustees of the California Medical Association—Paul D. Foster.
13. Report of Physicians' Benevolence Fund, Inc.—Paul D. Foster, President.
14. Report of the Secretary—Matthew N. Hosmer.
15. Report of the Editor—Dwight L. Wilbur.
16. Report of the Executive Secretary—John Hunton.
17. Report of Legal Counsel—Peart, Baraty and Hassard.
18. Report of the Committee for Emergency Action—Paul D. Foster.
19. Report of the Council—Samuel R. Sherman, Chairman.
20. Report of C.P.S. Board of Trustees—A. A. Morrison, President.
21. Reports of Commissions.
    (a) Commission on Cancer—Burt L. Davis, Palo Alto.
        (1) Committee on Cancer Education—Sol Baker, Los Angeles.
        (2) Committee on Consultative Tumor Boards—Ian Macdonald, Los Angeles.
        (3) Committee on New and Unproved Methods of Cancer Treatment—James C. Doyle, Beverly Hills.
        (4) Committee on Special Cancer Programs—James Martin, Sacramento.
        (5) Committee on Tumor Tissue Registry—Justin J. Stein, Los Angeles.
    (b) Commission on Community Health Services—James MacLaggan, San Diego.
        (1) Committee on Allied Health Agencies—James MacLaggan, San Diego.
        (2) Committee on Blood Banks—James Moore, Ventura.
        (3) Committee on Disaster Medical Care—Justin J. Stein, Los Angeles.
        (4) Committee on Industrial Health—Packard Thurber, Jr., Los Angeles.
        (5) Committee on Rural and Community Health—Robb Smith, Orange Cove.
        (6) Committee on School Health—Charles A. Branthaver, Sacramento.
        (7) Committee on Traffic Safety—Joseph Maguire, Ventura.
    (c) Commission on Medical Education—Albert C. Daniels, San Francisco.

    - (1) Committee on Maternal and Child Care—James Ravenscroft, San Diego.
    - (2) Committee on Postgraduate Activities—Albert C. Daniels, San Francisco.
    - (3) Committee on Scientific Work—Albert C. Daniels, San Francisco.
  - (d) Commission on Medical Services—Donald C. Harrington, Stockton.
    - (1) Committee on Aging—Clarence H. Albaugh, Los Angeles.
    - (2) Committee on Fees—H. Dean Hoskins, Oakland.
    - (3) Committee on Government Financed Medical Care—John M. Rumsey, San Diego.
      - (a) Liaison Committee to the California Vocational Rehabilitation Service—Francis J. Cox, San Francisco.
      - (b) Liaison Committee to Department of Health, Education and Welfare—Malcolm C. Todd, Long Beach.
      - (c) Liaison Committee to Medicare and VA Home Town Care Program—John M. Rumsey, San Diego.
      - (d) Liaison Committee to State Department of Social Welfare—William F. Quinn, Los Angeles.
    - (4) Committee on Medical Care Insurance—Donald C. Harrington, Stockton.
      - (a) Subcommittee on Local Medical Society Sponsored Programs—John F. Murray, Fresno.
      - (b) Subcommittee on Miscellaneous Programs —Henry Gibbons, III, San Francisco.
      - (c) Subcommittee on Uniform Claim Forms—Dudley Cobb, Jr., Los Angeles.
      - (d) Liaison Committee to California Self-Insurers Association—Albert G. Miller, San Mateo.
      - (e) Liaison Committee to Insurance Industry —Joseph Telford, San Diego.
    - (5) Committee on Rehabilitation—Elizabeth Austin, Los Angeles.
  - (e) Commission on Professional Welfare—Arthur A. Kirchner, Los Angeles.
    - (1) Committee on Health and Accident Insurance —Homer C. Pheasant, Los Angeles.
    - (2) Committee on Private Practice of Medicine by Medical School Faculty Members—Werner Hoyt, Mt. Shasta.
    - (3) Medical Review and Advisory Board—Arthur A. Kirchner, Los Angeles.
  - (f) Commission on Public Agencies—Omer W. Wheeler, Riverside.
    - (1) Committee on Adoptions—George K. Herzog, Jr., San Francisco.
    - (2) Committee on Mental Health—Stuart Knox, Los Angeles.
    - (3) Committee on Other Professions—Wayne Pollock, Sacramento.
    - (4) Committee on State Medical Services—Omer W. Wheeler, Riverside.
    - (5) Committee on Veterans Affairs—Charles B. Hudson, Oakland.
  - (g) Commission on Public Policy—Dan O. Kilroy, Sacramento.
    - (1) Committee on Legislation—Dan O. Kilroy, Sacramento.
    - (2) Committee on Public Relations—Malcolm S. M. Watts, San Francisco.
      - (a) Sub-Committee on Radio, Television and Motion Pictures—John B. Schaupp, San Francisco.
  - (h) Judicial Commission—Donald A. Charnock, Los Angeles.

22. Reports of Other Committees.
  - (a) Advertising Committee — Robertson Ward, San Francisco.
  - (b) Bureau of Research and Planning—Donald D. Lum, Alameda.
  - (c) Finance Committee, Ivan C. Heron, San Francisco.
  - (d) Committee on History and Obituaries—J. Marion Read, San Francisco.
  - (e) Medical Executives Conference—Robert L. Wood, Jr., San Mateo.
  - (f) Delegates to the A.M.A.—Donald Cass, Los Angeles.
  - (g) Liaison Committee to C.P.S.—James C. MacLaggan, San Diego.
  - (h) Liaison Committee to the State Bar of California—Francis E. West, San Diego.

23. Old and Unfinished Business.

24. New Business.

SECOND MEETING

Tuesday, May 2, at 4:00 p.m.

(To be recessed and reconvened at 9:30 a.m., Wednesday, May 3)

ORDER OF BUSINESS

1. Call to order.
2. Supplemental report of Credentials Committee.
3. Roll call.
4. Secretary's announcement of Council's selection of time and place for the 1962 annual session.
5. Election of officers:
  - (a) President-elect.
  - (b) Speaker.
  - (c) Vice-speaker.
  - (d) Councilors (three-year terms).
    - (1) First District—James C. MacLaggan, San Diego (term expiring).
      First District—San Diego County.
    - (2) Second District—Omer W. Wheeler, Riverside (term expiring).
      Second District—Imperial, Inyo, Mono, Orange, Riverside and San Bernardino counties.
    - (3) Third District—Office No. 3 — J. Norman O'Neill, Los Angeles (term expiring).
      Third District—Los Angeles County.
    - (4) Third District—Office No. 6—Gerald W. Shaw, Santa Monica (term expiring).
      Third District—Los Angeles County.

(5) Fourth District—James W. Dalton, Santa Barbara (term expiring).
Fourth District—San Luis Obispo, Santa Barbara and Ventura counties.

(6) Sixth District—Office No. 1—Burt L. Davis, Palo Alto (term expiring).
Sixth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz counties.

(7) Seventh District—Office No. 2—Donald M. Campbell, San Francisco (term expiring).
Seventh District—San Francisco County.

(8) Eighth District—Office No. 2—New Office—term expiring 1964.
Eighth District—Alameda and Contra Costa counties.

(e) Delegates to the American Medical Association: Delegates and Alternates to the American Medical Association are elected for terms of two calendar years. The Delegates and Alternates to be elected at this meeting will serve for two calendar years starting January 1, 1962.

Incumbents:

(1) Henry Gibbons III, San Francisco (term expiring).

(2) Sam J. McClendon, San Diego (term expiring).

(3) Eugene F. Hoffman, Los Angeles (term expiring).

(4) Warren L. Bostick, San Rafael (term expiring).

(5) J. B. Price, Santa Ana (term expiring).

(6) Frank A. MacDonald, Sacramento (term expiring).

(7) Paul D. Foster, Los Angeles (term expiring).

(8) Donald A. Charnock, Los Angeles (term expiring).

(9) New Office—term to start immediately, expire December 31, 1962.

(f) Alternates to the American Medical Association. All terms expiring. All offices for two-year terms starting January 1, 1962, except as noted:

(1) Claude P. Callaway, San Francisco (alternate to Henry Gibbons, III).

(2) John M. Rumsey, San Diego (alternate to Sam J. McClendon).

(3) Gerald W. Shaw, Santa Monica (alternate to Eugene F. Hoffman).

(4) Francis H. O'Neill, Eureka (alternate to Warren L. Bostick).

(5) Charles Hudson, Oakland (alternate to J. B. Price).

(6) J. E. Vaughan, Bakersfield (alternate to Frank A. MacDonald).

(7) Malcolm C. Todd, Long Beach (alternate to Paul D. Foster).

(8) Carl M. Hadley, San Bernardino (alternate to Donald A. Charnock).

(9) New Office—to start immediately, expire December 31, 1962.

6. Election of C.P.S. Trustees (three-year terms):
Report of C.M.A. Council as Nominating Committee.
Incumbents:

(a) Mr. Thomas Hadfield, San Francisco.

(b) Rt. Rev. Msgr. T. J. O'Dwyer, Los Angeles.

(c) Arlo A. Morrison, Ventura (not eligible for reelection).

(d) Dave F. Dozier, Sacramento (not eligible for reelection).

7. Announcement by Secretary.
Council's nominations of members of Commissions and Committees (for approval by the House of Delegates).

8. Reports of Reference Committees:

(a) Reports of Reference Committee No. 1 on Reports of Officers, the Council, Commission and Standing and Special Committees.

(b) Report of Reference Committee No. 2 on Reports of the Secretary, the Executive Secretary, and the budget and dues.

(c) Report of Reference Committee No. 3 on Resolutions and New and Miscellaneous Business.

(d) Report of Reference Committee No. 3A on Resolutions and New and Miscellaneous Business.

(e) Report of Reference Committee No. 4 on Amendments to the Constitution and By-Laws.

(f) Report of Reference Committee on C.P.S. Business.

9. Unfinished Business.

10. New Business.

11. Presentation of Officers:
President.
President-elect.
Speaker.
Vice-speaker.

12. Presentation of certificate to retiring president Paul D. Foster.

13. Approval of minutes. (Committee to edit.)

14. Adjournment.

James C. Doyle, *Speaker*
Matthew N. Hosmer, *Secretary*

PROPOSED CONSTITUTIONAL AMENDMENT

One proposed amendment to the Constitution of the California Medical Association was introduced in the 1960 House of Delegates. In accordance with requirements of the Constitution, this proposed amendment must lie on the table for one year, during which time it must be published in two issues of California Medicine.

In the 1961 House of Delegates, this proposed amendment will be reviewed by a Reference Committee and reported back to the House of Delegates with the recommendation of that committee for approval or disapproval.

Proposed amendments to the Constitution may not be amended following their introduction but are voted on in the form in which they are introduced. A two-thirds affirmative vote in the House of Delegates is required for passage.

Author: C. J. Attwood.
Representing: Constitution Study Committee.

Resolved: That Article VIII, Section 3, of the Constitution be amended by deleting the final paragraph of the section, starting with the words "Further, such amendment . . ." and concluding with the words "prior to submission to the House of Delegates for vote." and substituting therefor the following:

"Further, such proposed amendment or amendments shall be referred to the appropriate reference committee, which shall hold hearings on the proposed amendment or amendments during the course of its regular business while the Association is in convention.

"If the proposal or proposals are introduced during the first meeting of the House, hearings shall be held at both the current and the next regular session. In this event, the reference committee shall report at a subsequent meeting of the House at the current session its findings and recommendations on the proposed amendment or amendments; this report shall be solely for the guidance of the reference committee and the House at the regular session at which the amendment or amendments are to be subject to vote. The reference committee at the current session may, with the consent of the author of proposed amendment or amendments, alter, amend or modify the proposed amendment or amendments and offer such altered version at a later meeting during the current session, together with its recommendations thereon.

"If the proposal or proposals are introduced during the second meeting of the House, hearings on them shall be held at the next regular session, prior to their submission to the House of Delegates for vote."

PRESIDENTS' DINNER DANCE

SUNDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel

Reception, 7 p.m., Embassy Room **Dinner Dance, 8 p.m., Cocoanut Grove**

Formal dress optional

Tickets will be on sale in the Main Lobby

REGISTRATION

Registration and information desks are located in the Ballroom Foyer, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration except for Postgraduate Courses. Registration desks are open Saturday through Wednesday. *Admission to the general and section sessions and exhibit areas is by badge only.*

PRE-CONVENTION REPORTS

Officers • Commissions • Committees

REPORTS OF GENERAL OFFICERS

REPORT OF THE PRESIDENT

To the House of Delegates:

To have had the privilege of serving as President of the California Medical Association is an honor I shall always remember.

The many friends I have made in all parts of the state, I shall always cherish.

If it can be said that my efforts on behalf of our beloved profession have, in some small way, been successful, I shall, for the rest of my life, feel more than amply repaid.

A visit to the San Diego County Medical Society in January completed my tour to all of the component county societies during my terms as President-Elect and President of the Association.

It should be reassuring to the members of the House to know that in nearly every county, physicians are, of course, meeting their responsibilities to their patients while additionally, they are taking part in the many local activities to earn for themselves the title of "physicians to the community."

Membership on the Governor's Committee on the Study of Medical Aid and Health took an excessive amount of my time during almost all of 1960.

Along with my other medical confreres on the committee, in my opinion, we exercised considerable leadership in matters of prime importance to the public and to the profession.

The final report of the committee was, therefore, devoid of some of the impractical suggestions which confronted us throughout most of our deliberations.

Mr. Howard Hassard, legal counsel, Mr. Robert Thomas and others of C.M.A.'s capable staff were of inestimable value to the committee members serving medicine in our deliberations.

Going on the basis that only an informed membership can make reasonable and intelligent decisions on the many matters so vital to the success of the California profession, I have, during the past year, distributed a great amount of information in the form of "Reports."

A careful reading of the reports, I believe, will make the deliberations of the House more meaningful and more constructive; this without the introduction of extraneous matters.

As President of the Association, I took part in many discussions relative to the question of medical care of the aging.

One trip involved bringing C.M.A.'s views to the officials of our American Medical Association.

This effort had its effect on the resolutions on elder care passed by the House of Delegates of A.M.A. and, to a degree, had a certain impact in passing the A.M.A.-supported Kerr-Mills Bill at the final session of the 1960 Congress.

During my term of office I have consulted with all of the committees conducting the affairs of the organization.

To mention them all would be impossible at this time. I am, however, very pleased with the constructive progress exhibited by the physicians who produced the revised Relative Value Study, the work of the doctors in the field of aging, public relations, public policy, medical education, cancer, allied professions, research and planning, to name but a few. It should be noted that a total of 586 devoted physicians serve on 65 C.M.A. commissions and committees.

The Trustees of the California Medical Association is a California nonprofit corporation which is designed to act as a holding company for surplus assets of the Association. It has existed for more than 30 years and has served during that period as a repository for surplus funds, a source of credit and a deterrent against unwise use of C.M.A. assets.

The members of the corporation are at all times the members of the C.M.A. Council, which is given complete authority over the appropriation of Association moneys. The deterrent effect mentioned here lies only in the fact that proposals which require funds in excess of those currently available must, to merit the approval of the Trustees, undergo a second evaluation by this second body. This provides, in effect, a "second reading" from which new and different standards of approval may emerge from those originally considered.

On another page of this issue will be found the financial reports of the corporation, which are broken down to show the overall financial status and the operations of the 693 Sutter Building as an operating entity.

During 1960 the corporation has provided financing for the C.M.A. through use of its borrowing power. The C.M.A. initiates its new budget on July 1 of each year, but does not start collecting the dues to meet that budget until the following January 1. During the final months of the year the corporation is able to borrow the needed operating funds and lend them to the Association. In the spring months, when dues are being received, these loans are retired.

Also during 1960, the Trustees voted to retire the life insurance policies carried on several key employees and to apply the proceeds against the funding costs for a new employee retirement program which will encompass all C.M.A. employees and which will necessarily be carried by the Association as the employer. This plan should be in effect by the time of the 1961 Annual Session.

The April 30 to May 3, 1961 meeting of the House of Delegates will be confronted with many vital problems. I shall name but two:

Progress on the proposed amalgamation with the members of the California Osteopathic Association is moving forward. The results of the C.M.A.-C.O.A. deliberations, as mentioned in my letter to the entire membership, will be presented to the House. The advantages to the public and to the professions will, I believe, be very clear by that time.

The results of the White House Conference on Aging, January 9 to 19, 1961, left much to be desired.

It should be remembered, however, that physicians were greatly outnumbered at the conference; that the social security recommendations could well have been expected considering the complexion of the attendees and how they were named.

The recommendations, therefore, can in *no way* be considered a congressional "mandate."

The profession, if I understand the determination of my fellow physicians will, at the meeting of the House, reaffirm our complete opposition to this drastic attempt at the socialization of our profession.

During the past year, Mr. Hassard, in his capacity as executive director of C.M.A., has made certain realignments in staff personnel. The eventual results will be to bring greater C.M.A. service to the various county societies through the assignment of "contact men" for natural geographic areas.

This, it should be noted, is the acceptance of additional responsibilities by the already busy staff.

To these men I offer my sincere appreciation.

And I reserve a special thanks for the year of cooperation by the general officers and the district councilors who have labored long and tirelessly for the welfare of the members of what is now the second largest state association in the nation.

Respectfully submitted,

Paul D. Foster, *President*

REPORT OF THE PRESIDENT-ELECT

To the President and the House of Delegates:

The President-Elect office serves the function not only of preparing the candidate for assuming the next position with more knowledge and background, but also to provide an opportunity for direct communication with society members during the various county visits. The communication is clearly in both directions, from the membership to him with his subsequent opportunity to report to the Council, and from him to the membership with presentation of recent major problems and basic trends in medicine's relationship to citizens.

The President-Elect's main contact has for several years been in the northern counties with the southern counties, below Bakersfield, traditionally being reserved for the visits of the President. Although some thirty-four counties have been visited, which represented considerable effort, it is nonetheless my strong feeling that this has been most worthwhile. Throughout the reception has been cordial, the attitude serious, and our members inquisitive, alert, and dedicated. It has been the conclusion of this officer that those visits which included also the attendance of the Auxiliary were more worthwhile, not only because of their increased numbers but also the important contact with the Woman's Auxiliary and the opportunity to impart to them a resume of the major attitudes and activities of your medical society.

This year I had an opportunity to visit as a guest, several of the district societies of the Los Angeles County Medical Association. I considered this a very desirable advantage since many of them are very large, larger even than many of our independent, component county societies. In the next year I hope to have an opportunity to meet with more of these most stimulating groups.

As has been the case in many recent years, the major emphasis has been on socio-economic problems, particularly as related to the insurance mechanism, the provision of medical services to particular segments of society, the general problem of quality control, hospital relations and the control and maintenance of standards of physicians' practice. The major trends in this direction have been entirely satisfactory. Communications, in both directions from society to individual member and vice versa, remain the single, most important still unresolved problem. It is absolutely essential that the full energies of this society must be directed towards improving those communications.

Respectfully submitted,

Warren L. Bostick, M.D.
President-Elect

REPORT OF THE SPEAKER AND VICE-SPEAKER OF THE HOUSE OF DELEGATES

To the President and the House of Delegates:

Your Speaker and Vice-Speaker sincerely appreciate your confidence in affording them the opportunity to serve and represent the House of Delegates and the California Medical Association. We have attended all of the Council and numerous other committee meetings throughout the year.

For the Annual Session of 1961, we have rearranged the schedule of meetings of the House of Delegates in order to provide more time for the delegates to attend the scientific sessions, and to initiate deliberations on the reports of Reference Committees at an earlier hour. The first meeting will convene Saturday, April 29th at 3:00 p.m. and should be completed in time for dinner. The second meeting will convene Sunday morning at 9:30 a.m. (Daylight Saving Time), probably finishing about noon. Our third meeting will be called to order Tuesday afternoon at 4:00 p.m. for elections and terminate in time for dinner. The last, and fourth meeting, will be Wednesday morning at 9:30 a.m. and should permit the business of the House to be transacted by luncheon time, or early afternoon. Because of this, delegates should be able to remain until the meeting is completed. Additionally beneficial will be the discussions on the Resolutions coming earlier in the day when everyone is less tired. We sincerely hope this will provide a more efficient agenda for all concerned.

Your Speaker and Vice-Speaker are most happy to follow the recommendations of the House of Delegates at all times. Thus, the Santa Clara County Resolution No. 38 calling for the seating of alternate delegates with the delegates will go into effect at this meeting. In order to do so, it will be necessary to remove the tables. This inconvenience is readily understandable in view of our numbers. This year we have 14 additional delegates, two additional councilors, and one additional past president, constituting a total of 405 members, not including the alternates. Obviously with the growth of our association, and the difficulties of providing a larger auditorium, we must consider some method of reducing the size of the House.

It is not too early for the respective county medical societies to be thinking of resolutions you wish introduced. Six copies should be submitted to the California Medical Association office, preferably 30 days in advance of our meeting. This does not preclude their submission at any time prior, or even on the floor of the House, once convened. However, resolutions sent in beforehand immeasurably facilitate the work of the C.M.A. staff. Should the number of resolutions to be submitted warrant, Committees 3A and 3B will be reactivated to carry the additional volume of work.

Your Speaker and Vice-Speaker enjoy to the utmost the cordial and cooperative spirit existing between the House and the chair. We encourage constructive suggestions and recommendations. We will, to the best of our ability, perform our tasks in a humble, honest and democratic manner.

Respectfully submitted,

James C. Doyle, *Speaker*
Ivan C. Heron, *Vice-Speaker*

REPORT OF THE PHYSICIANS' BENEVOLENCE FUND, INC.

To the House of Delegates:

Physicians' Benevolence Fund, Inc., is the outgrowth of a fund established by the House of Delegates in 1940. Its function is to provide financial assistance for needy physicians or their families.

This financial aid is usually extended for temporary periods and is intended to supplement and not supplant other sources of income. The fund, by the decision of its own operating committee, is not intended as a retirement fund.

During the past year the fund has contributed to the maintenance of several physicians and two widows. In addition, it has supplied $6,000 to Los Angeles Physicians' Aid, which maintains a retirement home and is currently building a nursing home for physicians and their families in Los Angeles.

The fund has also advanced a loan of $50,000, secured by real estate, to Los Angeles Physicians' Aid. This loan carries 2½ per cent annual interest and is repayable in quarterly installments which will start on September 1, 1961.

Financing of the fund comes from the allocation of one dollar from the annual dues of each C.M.A. member, together with contributions from the Woman's Auxiliary and from earnings on investments. In the fiscal year ended June 30, 1960, the C.M.A. contributed $16,703 from dues, the Woman's Auxiliary donated $2,766 and income on investments amounted to $2,872. Total income was $22,641.

Expenditures, including $327 of operating costs, amounted to $16,526, leaving a surplus of income over expenditures of $6,389. including $300 returned to the fund by one beneficiary who regained his own earning capacity during the year.

At the close of the fiscal year the fund showed total assets of $121,889, of which $93,153 was invested in government securities.

The operating committee for this fund is made up of Doctors Ford P. Cady and Elizabeth Mason-Hohl of Los Angeles, Don C. Musser of San Francisco, Clyde L. Boice of Santa Clara and George C. Wolf of Fresno County. The members of this committee have been most prompt and understanding when appeals for assistance have been received and our thanks go to them for their unselfish devotion to this charitable enterprise. The staff of the C.M.A. handles all operating details and the only cost of administration is a modest professional fee for auditing the books each year.

Our thanks also go to the Woman's Auxiliary for its continued financial support and its willingness to investigate needy cases. We should also thank the personal physicians of our needy members and their families, who have consistently and anonymously furnished their own services to these people and kept the fund advised on the physical needs and outlook for these recipients.

Respectfully submitted,

Paul D. Foster, *President*

REPORT OF THE SECRETARY

To the President and the House of Delegates:

I have attended all of the meetings and carried out the duties of secretary as designated by the Constitution as well as the duties assigned to me by the Council.

Respectfully submitted,

Matthew N. Hosmer, *Secretary*

REPORT OF THE EDITOR

To the President and the House of Delegates:

Although feeling no compulsion to make changes merely for the sake of change, the editor of California Medicine, reviewing the past year in preparing to make his annual report to the membership, found himself looking back over a period in which not much happened to your journal save for a slow accretion of stature among medical publications. This view is one to suggest consideration anew of things that might be done to make California Medicine a better instrument of communication and one that the members of our Association may think of with conscious pride. Matters of content, of format and of exterior dress will be deliberately examined in that light in the year ahead.

The stature of a publication is difficult to measure, but one gauge of the progress of your journal is the number and the quality of manuscripts submitted to it. In this regard it is heartening to report, at a time that many state journals are complaining of a decrease in the number of articles submitted for publication, that California Medicine continues to receive almost twice as many as it publishes. Moreover, some of those submitted but not accepted are rejected not because of lack of merit but because they are considered too specialized or too much like others that are already in inventory awaiting publication. Indeed, many of that order are later published in other journals.

California Medicine publishes about half of the papers read at the Annual Session of the California Medical Association and about the same proportion of the manuscripts that are offered through other channels.

Your journal continues to occupy a respected position among the journals of state medical associations, and again the editor wishes to express his thanks to the persons who help to keep it there. Besides those whose names are on the masthead and on the roster of the Editorial Board, there are many others who serve anonymously—reviewing books, writing reports, advising as to manuscripts of a special nature. A debt to them is here gratefully acknowledged. Sincere thanks go again to Robert Edwards, who as assistant to the Editor, continues to play an increasingly important role in making California Medicine an outstanding journal. To Mrs. Barbara Rooney who so successfully watches the countless details in the editorial office and to John Hunton who has contributed numerous good editorials go the gratitude and appreciation of the Editor.

Respectfully submitted,

Dwight L. Wilbur, *Editor*

REPORT OF THE EXECUTIVE SECRETARY

To the President and the House of Delegates:

This report is drafted by the executive secretary but in reality represents the entire staff of the Association and is submitted in their behalf.

The California Medical Association has undergone a large and rapid expansion in the past two years. It has undertaken new and empirical activities, has established a strong system of activities under a number of commissions and committees and has, of necessity, set up a new and larger household. This expansion has been noted in a large increase in staff and in higher monetary outlays for personnel, equipment, travel, meeting cost and all the other items that enter into the overall budget of the Association.

The endeavor on the part of the staff has been to provide for an orderly growth, without waste, and with maximum efficiency. Along these lines, the transition from a relatively small office to a considerably larger operation has been essentially a smooth one.

On this base, this report will proceed in detailed sections, as outlined below. It is hoped that all members of the House of Delegates and of the Association will feel free to attend the meetings of the reference committee which discusses this report and will raise all questions on which additional information is required.

1. *Administrative.* The Association has now been installed in its new quarters for more than one year. While the move entailed a number of problems and while a shaking-down period has been necessary, the office setup today is essentially complete, comfortable and efficient. Offices have been arranged to group allied activities together, such as administration, commission and committee work, publication, etc.

A central filing room has been set up and a new filing system is being installed. Membership and bookkeeping activities, which grow in direct proportion to the growth in membership, have been expanded to meet the increase in volume. A new filing system for members' records of membership and accounts has been installed and gauged to accommodate anticipated growth in the future.

Telephone services provide intercommunications throughout the building and a new type of switchboard for incoming calls only frees the telephone operator for other duties.

New equipment, including a multilith machine, a new high-speed Addressograph and a new Graphotype for preparing mailing plates, is in operation and functioning well. Members may be interested to know that as many as 500,000 printed pages are produced in some months and that the number of pieces of mail addressed monthly runs into the hundreds of thousands. This volume requires careful scheduling and the establishment of a priority system of dates as a means of guaranteeing production of all projects at the desired time.

2. *Personnel.* The C.M.A. staff now includes 14 full-time and three part-time administrative employees and 32 clerical employees, the latter including one janitor and two part-time employees. These figures include two administrative and two clerical employees in the Los Angeles office.

Administrative employees in San Francisco include a new executive in the public relations department, a new director of research and eight new clerical employees. New employees have been added as required. As each new administrative position is created, a new clerical employee is required. In addition, an increasing volume of work has necessitated the addition of several employees to handle unwieldy workloads in some areas. It is believed that the present staff is adequate at this time and for the foreseeable future if the present program of the Association remains in effect. With additional projects, additional employees are required.

An idea of the growth of C.M.A. staff in recent years may be gained by the comparative figures shown below. These are employee totals, administrative and clerical, as of December 1 of 1960, 1958 and 1955:

	1960	*1958*	*1955*
Administrative	17	11	10
Clerical	32	19	15

3. *Membership.* Membership in the Association continued to grow in 1960 but the rate of growth was somewhat lower than in earlier years. Membership totals, showing the number of active members by counties as of November 1, 1960, and a year earlier, are shown below. It should be noted that 30 of the 40 county societies registered a gain in membership in the years compared, while six societies showed a loss and four reported no change. A year ago the same comparison showed 33 societies with membership gains, three with losses and four with no change. Percentagewise, the gain in active members in 1960 was 3.55 per cent, compared with 4.54 per cent for the preceding year and 4.20 per cent for the 1958 period.

ACTIVE MEMBERSHIP IN THE C.M.A. BY COUNTY SOCIETIES

	Nov. 1, 1959	*Nov. 1, 1960*
Alameda-Contra Costa	1,401	1,504
Butte-Glenn	84	86
Fresno	277	276
Humboldt-Del Norte	86	91
Imperial	54	52
Inyo-Mono	9	9
Kern	212	230
Kings	36	34
Lassen-Plumas-Modoc	26	27
Los Angeles	6,920	7,094
Madera	16	18
Marin	180	184
Mendocino-Lake	59	55
Merced	56	58
Monterey	184	184
Napa	81	80
Orange	541	587
Placer-Nevada-Sierra	69	72
Riverside	213	236
Sacramento	423	429
San Benito	12	11
San Bernardino	356	366
San Diego	871	912
San Francisco	1,673	1,728
San Joaquin	210	219
San Luis Obispo	84	86
San Mateo	507	507
Santa Barbara	217	225
Santa Clara	707	755
Santa Cruz	94	98
Shasta-Trinity	62	68
Siskiyou	22	23
Solano	73	74
Sonoma	166	168
Stanislaus	155	164
Tehama	17	17
Tulare	113	114
Ventura	118	123
Yolo	45	48
Yuba-Sutter-Colusa	53	55
TOTAL	16,482	17,067

4. *Financial.* Balance sheets and operating statements for the Association and for Trustees of the C.M.A. and Physicians' Benevolence Fund, Inc., appear elsewhere in this issue under the report of the Finance Committee. Books and accounts of all three entities are maintained by C.M.A. staff members and no charges are made to the subsidiaries for this service.

For the fiscal year ended June 30, 1960, the Association again operated at a deficit. The net deficit for the year was $20,054, compared with a deficit of $49,329 for the preceding fiscal year and a deficit of $40,402 for the 1958 fiscal year.

Income from dues for the 1960 fiscal period was $840,266, a gain of 13.7 per cent from the $732,058 for the preceding year. This increase reflects both a 10 per cent increase in the level of dues and a membership gain.

Income from postgraduate courses was $12,445, a decrease of 34.9 per cent from the preceding year. Advertising income was $234,007, up 22.4 per cent from the 1959 period.

Expenses for the 1960 fiscal year are shown in detail in the Finance Committee report on another page. In brief, administrative costs for the year were up 37.4 per cent, the costs of scientific, educational and public relations activities were 1 per cent lower than in the preceding year, and the costs of CALIFORNIA MEDICINE were up 8.4 per cent. In the case of the journal, income was sufficiently above the increased costs to return a surplus from the publication, without crediting dues income, for the first time in its history. It is hoped that this condition may be maintained so that the journal may stand completely on its own feet financially.

The increase in administrative costs, amounting to $104,313 over the preceding fiscal year, represents increased costs in nearly every item of expense. The greatest part of this increase resulted from the move to new quarters and to the expanded operations of the Association. Close to $35,000 of the increase was in the form of furniture and equipment purchased for the new headquarters; practically all of this is nonrecurring and will not be reflected in future budgets. In addition, the costs of rent, postage, telephone, office supplies, etc., were greater because of the need of preparing new forms, providing office communications and meeting increased mailing demands.

To meet these increased costs, particularly in the six months of the calendar year preceding the collection of dues, the Association has had to resort to borrowing. A line of credit has been established at the bank by the Trustees of the C.M.A., using securities as collateral, and interfund lending and borrowing at nominal interest rates provides operating funds. Such borrowing takes place in the closing months of the calendar year and repayment is made in the spring months. At the close of 1960 bank loans amounted to $420,000. The Finance Committee has reported to the Council that this amounts to approximately $25 per active member but no proposals have been made to raise this sum to eliminate borrowing.

A budget for the 1961-1962 fiscal year will be prepared for the Finance Committee and the Council, to be approved by these bodies before being submitted to the 1961 House of Delegates.

5. California Medicine. The journal continues to occupy a high position among state and regional medical journals. The editor constantly strives for improved editorial content and currently, through the ad hoc Committee on Scientific Activities, is exploring future possibilities for California Medicine. Improvements in format and presentation of material are made when and where indicated and it is gratifying to note that some innovations here are emulated by other publishers.

In the field of advertising, the journal enjoyed a record year in income. This is attributed almost entirely to an upward revision of advertising rates, in line with increased circulation. In advertising volume, there now appears to be a decrease from the level established in 1959. Part of this is due to the critical standards applied by the Advertising Committee and part to what appears to be a lessening of promotional effort by pharmaceutical producers. It appears that hearings by a Senate committee into drug promotion and pricing may have caused some producers to retrench in the promotion of their products. Just what turn this trend may take in the future is not discernible at this time. Meanwhile, economies in production operations of the journal have kept total costs within reasonable levels and, in some instances, have permitted actual savings to the advertiser and the publisher alike.

6. *Annual Session.* Arrangements are practically complete at the end of 1960 for the 1961 Annual Session. Through a suggestion from the staff, the Council has approved the separation of both the first and second meetings of the House of Delegates into two sections. Under this arrangement, the House will meet on April 29 for the reports of officers and guests and the carrying out of routine business items. It will then recess until Sunday morning, April 30, for the introduction of new business. Reference committees will then meet. For the final meeting, a session will be held on Tuesday, May 2, for elections. The House will then recess until Wednesday, May 3, at which time it will consider the reference committee reports and hold its closing ceremonies. This arrangement is calculated to eliminate tediously long meetings and to provide adequate time for reference committees to complete their work.

In addition, several innovations will be made in an effort to facilitate and expedite the work of the House and its committees.

The Association is still plagued with the lack of adequate space under one roof for an Annual Session. At the Ambassador Hotel in Los Angeles it is necessary to budget space very closely to meet as many demands as possible. Even then, space is not available for all acceptable scientific exhibits or for organizational exhibits of the Association and its allied organizations. The situation will be magnified in San Francisco in 1962, when space will be required in two hotels and possibly in nearby auditoriums.

7. *Staff Comments.* The growth of the C.M.A. staff in recent years has been outlined earlier in this report. It should be emphasized here that the increase in staff composition has come about not from empire-building within the staff but from the need to carry out functions which the House of Delegates, the Council and the commissions have approved. A review of the budget for each year will demonstrate the breakdown of activities among the various commissions and permit an evaluation of the cost and the returns to the Association from any selected program. In round figures, the addition of one administrative staff member at an annual salary of $12,000 means a total added cost of about $25,000 a year when rent, supplies, secretarial assistance, travel, etc., are considered. It is believed at this time that the Association has a dedicated and efficient staff, adequate for present activities. Members of the House of Delegates will, however, want to bear in mind the added costs which are necessitated when new programs or projects are voted.

During 1960, Mr. Bill Tobitt was added to the staff to handle radio and television matters and to assist in other work in public relations. Late in the year Mr. Murray Klutch was employed as director of research for the Bureau of Research and Planning. In addition, several additional clerical employees have been obtained to meet an increasing workload throughout the organization.

In behalf of the entire staff, may I thank the Officers, Councilors and commission-committee chairmen and members with whom we are privileged to work. A mutally cooperative attitude is prevalent throughout the C.M.A. and it is only under such circumstances that an effective and efficient operation of this magnitude can be attained.

Respectfully submitted,
John Hunton, *Executive Secretary*

REPORT OF LEGAL COUNSEL

To the President and the House of Delegates:

The Legal Department submits the following report covering the interval between the 1960 annual session in February and the time of the submission of this report.

There has been attendance at the annual session and at all meetings of the Council, various commissions, standing committees, special committees of the Association as well as many committee hearings at the State Legislature; many reports have been prepared and submitted and many opinions given on a number of subjects, as requested by the Association, its officers and committees as well as its members and its component societies; several articles have also been written for California Medicine.

In the field of legal liability for personal injuries, the outstanding development during the past year was the decision of our California Appellate Courts in the Cutter Laboratories case. A number of damage suits have been brought against Cutter Laboratories arising out of the fact that one of the early batches of Cutter Salk vaccine apparently contained live virus which resulted in a number of cases of poliomyelitis. The first of these cases was tried in Oakland about two years ago. The plaintiff asserted two legal theories of liability, as follows: (1) That Cutter Laboratories was negligent in the manufacture of the vaccine and (2) that independent of negligence, Cutter Laboratories impliedly warranted that its vaccine was "fit for the purpose intended," namely, prevention of poliomyelitis. The jury expressly found that Cutter was *not* negligent. However, the jury also found that under the law as expounded to it by the judge, it had to find that Cutter had violated the implied warranty.

On appeal, our District Court of Appeal affirmed the damage award against Cutter and established as the law in California that a manufacturer of pharmaceutical products impliedly warrants that such products are fit for the purpose intended. Our Supreme Court concurred in the conclusions reached by the District Court of Appeal.

The case has been reviewed in detail in CALIFORNIA MEDICINE, December, 1960, at page 376.

The legal doctrine of implied warranty, which applies to the sale of goods, is obviously being extended by the courts into new areas. The Cutter decision is the first application of implied warranty to pharmaceutical or biological products. If it is further extended in the field of medical care it could have a profound effect upon the practice of medicine. Meantime, however, it must be noted that the physicians who administered Cutter's Salk vaccine have not been sued. All of the lawsuits have been aimed directly at the source of the material—Cutter Laboratories.

We have a number of other matters to report to the House of Delegates, not only in the field of professional liability but also in other areas of the law that affect the practice of medicine. However, due to the nature of the items involved and the desirability of submitting current information to the House, we will not pursue these subjects any further at this time but instead will seek permission of the Speaker to submit a supplementary report at the first meeting of the House at the 1961 Session.

During the year we have appeared before a number of county medical societies to speak on various subjects, and have also appeared as guest speaker at joint medical-legal meetings at Kansas City and Salt Lake City and at the annual State Bar meeting of the Michigan State Bar.

Numerous other matters involving the Association have arisen during the past year. In addition to the writer of this report, Messrs. Alan L. Bonnington, Robert D. Huber and Salvatore Bossio of our firm have devoted a great deal of time and effort to the legal affairs of the Association throughout the year. Much credit is due them.

It is a pleasure to be of service to the medical profession in California.

Respectfully submitted,

PEART, BARATY & HASSARD
By: HOWARD HASSARD

REPORT OF THE COMMITTEE FOR EMERGENCY ACTION

To the House of Delegates:

The Committee for Emergency Action was created several years ago to succeed to the functions of the former Executive Committee. Its members are the President, the President-elect, the Council chairman and the Speaker of the House of Delegates. These four officials, who sit with the Council in all its deliberations, are entrusted with final approval of items which the Council has approved in principle but not in detail. They are also assigned additional tasks by the Council from time to time and they constitute a small group which can be called together for personal or telephone conference meetings with a minimum loss of time in the event a speedy decision is needed.

The recommendations of the committee are subject to approval by the Council at its next succeeding meeting and are printed as a part of the Council minutes.

During the past year the committee has met on several occasions and reached decisions which have subsequently met with Council approval. The availability of such a committee can be of great help to the Council by providing a standby force which can work out details of programs and can speak with authority for the larger body, the Council, when rapid action is needed. These functions have been carried out faithfully during 1960.

Respectfully submitted,

PAUL D. FOSTER, *Chairman*

REPORT OF THE COUNCIL

To the President and the House of Delegates:

The Council has held eight meetings between the close of the 1960 Annual Session and the end of calendar year 1960. Two of these have been two-day sessions. Further meetings are scheduled for each month between January 1 and the time of the 1961 Annual Session.

Minutes of each meeting have been published in CALIFORNIA MEDICINE for the information of all members of the Association. In addition, preliminary drafts of all Council minutes are sent regularly to all county society presidents, secretaries and executive secretaries. For the further convenience of the county societies, a concise digest of the principal actions taken at each Council meeting is prepared in the days immediately following each meeting and sent to the county societies under the heading "Council Hi-Lites." Several societies have found these useful for publication in their bulletins.

Many Council actions have been concerned with reports and recommendations by the various commissions and committees. Details on such matters will be found in the reports of the commissions and their subcommittees. The purpose of this report is to highlight the principal items of business transacted by the Council during the year. Where further details are requested, Council members will be available before the reference committees during the 1961 Annual Session.

1. *Resolutions of the 1960 House of Delegates.*

The 1960 House of Delegates voted to refer to the Council six resolutions introduced in that session. The following actions were taken by the Council:

Resolution No. 16—Compensation of interns and residents. Referred to the Liaison Committee with the California Hospital Association. Discussions under way.

Resolution No. 23—Legal immunity for members of tissue and similar committees. Referred to Liaison Committee with California Hospital Association. Agreement reached that legislation should be introduced. Bill prepared and now under study for approval for introduction into Legislature.

Resolution No. 36—House Joint Resolution No. 23. Tabled.

Resolution No. 37—Legislation on hypnosis. Referred to Committee on Mental Health. Under study in committee.

Resolution No. 40—Fall-out shelters. Referred to Committee on Disaster Medical Care. Under consideration by committee.

Resolution No. 48—Insurance mediation committees. Referred to Commission on Medical Services, which has advised Health Insurance Council of the availability of county society mediation committees.

In addition to the resolutions referred directly to it by the House of Delegates, all resolutions from the session were reviewed by the Council and referred to appropriate committees or other action taken. Reports on resolutions referred to commissions and committees will appear in their respective reports. Nine resolutions not so referred but calling for action were ordered activated by the staff. These were Resolutions Nos. 4, 8, 32, 33, 34, 35, 38, 41 and 71.

Resolution No. 74 was referred to the Speaker of the House of Delegates. Nine resolutions, numbers 30, 47, 48, 51, 59, 62, 65, 68 and 73, were referred to the Commission on Medical Services. In addition, numbers 6, 13, 57, 75 and 76 were referred to the Liaison Committee between the Commission on Medical Services and California Physicians Service. Twelve resolutions, numbers 3, 5, 7, 10, 11, 12, 14, 18, 29, 31, 45 and 46, were referred to the Board of Trustees of C. P. S.

Other resolutions were referred to specified commissions and committees, which will report on them. A complete report on the actions and referrals taken by the Council appeared in the Council minutes covering the March 26, 1960, meeting.

2. *Departments of the State of California.*

Throughout the year the Council has been privileged to have representatives of the State Department of Public Health, State Department of Mental Hygiene and State Department of Social Welfare attend Council meetings, report on current topics and extend the cooperation of these important activities to the Association. Participation by the state in medical practice covers a wide field and assumes a growing importance in terms of the total medical practice. Through the cooperation of the major departments controlling such practice the Council believes it has been effective in presenting the position of the practising physician and in assuring the recognition of the individual physician in the large state programs.

One factor of extreme importance in this connection is the level at which the State of California compensates physicians for their services to state wards. In fields of the aged, the blind, crippled children and vocational rehabilitation it has become apparent that different levels of professional fees are in use. State officers have resisted attempts to increase fees which are considered substandard and have, instead, insisted on "freezing" medical fees at a substandard level for all medical services. The Council is now working on means to "unfreeze" such fees and put them more in line with the going level of professional fees in all parts of the state. This procedure is bound to be lengthy and cumbersome but it is hoped that reasonable standards may be evolved so that physicians treating patients where the State of California is responsible for payment may receive fees in keeping with their normal charges for comparable services.

3. *Governor's Committee on Medical Aid and Health.*

During the entire year the Council has followed the deliberations and subsequent decisions and recommendations of the Governor's Committee for Medical Aid and Health. Doctor Paul D. Foster, C.M.A. president, and Doctor T. Eric Reynolds, immediate past president, have served as members of this committee and have kept the Council advised on its progress. Obviously, a great deal of proposed legislation will result from the findings of this committee; the Council intends to follow such legislative proposals as they are introduced and to take such action as is deemed proper for the public health and the practice of medicine.

A further conference, the White House Conference on the Aging, is scheduled to be held in Washington in January. Several physicians have been included in the list of invitees prepared by Governor Brown; reports may be expected from these participants prior to the Annual Session. Recommendations from California to be presented at this conference are the result of a similar conference held by the governor in Sacramento, at which the two thousand participants declined to approve proposals which would have injected the state further into the practice of medicine.

4. *Bureau of Research and Planning.*

During 1960 the Bureau of Research and Planning continued to expand its library and reference material. Toward the close of the year a director of research was employed and he has already outlined for the consideration of the bureau a number of proposed areas of research. The Council has been kept advised of the activities of the bureau and is confident that under the aegis of the new director a sound program and solid progress may be anticipated.

5. *Relative Value Studies.*

The Council approved the new edition of the Relative Value Studies and copies have been issued to all members. This work has attained a national position and copies are in demand from all parts of the country. The Council is aware of the fact that this study may be misinterpreted and has agreed with the committee which produced the studies to the inclusion of repeated cautions to the effect that this is not a schedule of fees. At the same time, it is obvious that the level of fees in the various areas of California may be related to the Relative Value Studies and that the work may therefore be of extreme value to many members. Plans are currently under consideration for making periodic revisions of these studies as economic conditions change.

6. *Disability Insurance.*

During 1960 the underwriter of the Association's disability insurance program has added a 10 per cent increase in benefits to existing policies and has provided, on an underwriting basis, for double the original coverage purchased by members. The insurance committee has agreed with the underwriters and the administrator that periodic reviews of financial results under this contract shall be made and that premiums will be lowered or benefits increased when and if benefit payments fall below an agreed-upon percentage of premiums received. New members of the Association are eligible to participate in this program and it has been noted that a reasonably large percentage of new members do take advantage of this protection.

7. *Society Security Poll Format.*

The Council in 1960 approved a format for polls which may be taken by county societies on the question of compulsory inclusion of doctors of medicine under the OASDI provisions of the Social Security Act. To date seven county societies have availed themselves of this format and have polled their members on this question. The results of these polls have shown a wide variation as between areas of the state. Additional polls may be taken by several other societies which have requested the format. Meanwhile, the Jenkins-Keogh Bills are still alive in the Congress and the movement to force physicians into the Social Security system continues. No estimate is possible at this time as to the sentiment of physicians in California because of the inconclusive results from various counties.

8. *California Medicine.*

The content of CALIFORNIA MEDICINE has come under review by an ad hoc committee to study all scientific activities of the Association. This committee hopes to have at least a progress report ready for the 1961 House of Delegates. In addition, the Editor has suggested several innovations which the Council has approved. The journal continues to rank high among the state and regional medical publications of the country and under its able editorial leadership the Council is confident that its status will remain highly respected.

9. *Public Relations.*

The Committee on Public Relations has worked throughout the year on the expanded public relations program contemplated last year. The committee has broken down its activities into categories and has named subcommittees for each. In addition, it has set up a subcommittee for motion pictures, television and radio. This subcommittee has reviewed a number of scripts and pilot films for TV viewing and has outlined a projected series of television programs. Most of these would be public service programs and a few would be "spectaculars" which would be sponsored by the Association and would carry messages of socio-economic factors. The Council has followed the activities and progress of this committee and has established special committees to review the financial expenditures of the television film promotions. A new staff member has been employed to bring technical television knowledge to the committee.

The Council wishes to point out that progress in the field of public relations is difficult to measure in an exact manner. The program under development at this time is designed to improve the stature of the profession in the eyes of the public, to leave with the public an impression of the medical profession which is comparable to that of a satisfied individual patient with his individual physician. Much planning and careful preparations are essential in this undertaking. While some members have proposed that teams of professional public relations counsel be employed to secure the desired results, the Council and the committees concerned are confident that the improvement of the image of the medical profession in the eyes of the public must proceed from the inside. This procedure will not show spectacular or immediately measurable results but will gradually improve the public image of the profession and help return it to the enviable position enjoyed by an earlier generation of physicians.

One aspect of public relations which has brought great credit to the profession has been the promotion of campaigns to assure prophylaxis for poliomyelitis and tetanus. Organized drives in selected county areas have made a favorable public impression and have provided the people of those areas with the protection against these diseases which is available from the vaccines we already have. This is preventive medicine in its highest sense. The Council has recently approved a resolution calling for widespread promotion of polio inoculations as a public health measure in which the medical profession can provide essential services and simultaneously afford the greatest possible protection to the public.

10. *Publications Corporation.*

During 1960 the Council approved the formation of a publishing corporation, known as Six Ninety Three Sutter Publications, Inc. This is a wholly-owned subsidiary of the Trustees of the California Medical Association and its business will be the sale of materials produced by the Association. Such publications as the Relative Value Studies, the Industrial Accident Commission fee schedule and others which are in great demand by others will be handled by this corporation. Regular distribution of published material to C.M.A. members will not be affected; however, where other organizations, insurance companies and others wish copies of C.M.A. materials, the publishing company will handle the sales and attempt to recapture a portion of the original production costs. Already there has been a great demand for the new edition of the Relative Value Studies and this is expected to continue. The business of the corporation is handled by the regular staff of the Association; overhead costs will be met by the payment of charges to the C.M.A.

11. *California Physicians' Service.*

Representatives of California Physicians' Service regularly attend meetings of the Council and present progress reports. Three members of the C.P.S. Board of Trustees are appointed each year from among the members of the Council and thus provide a direct and continuing liaison between the two organizations. Where matters of C.P.S. policy are involved, the Council is frequently asked for an expression of judgment for the guidance of the Board of Trustees.

It is obvious that the course of C.P.S. in recent years has been made difficult by conflicts of interest and philosophy, especially among physicians. It is also obvious that many physicians are not familiar with the fact that California Physicians Service was founded by unanimous vote of the C.M.A. House of Delegates and that it is now and has at all times been part and parcel of the C.M.A. The Editor of CALIFORNIA MEDICINE has prepared an editorial to bring out this fact and it is hoped that he will elaborate on the relationship between the two organizations in later issues. The making of policy for C.P.S. originates in the C.M.A. House of Delegates. The function of the Council is to implement and carry out the decisions of the House. It is hoped that the members of the House of Delegates will be fully aware of the blood relationship of C.M.A. and C.P.S. in considering resolutions and policy proposals brought up for discussion.

During the past year there has developed a divergence of opinion between C.P.S. and some of the county societies which have sponsored county-wide programs for the supervision of voluntary health insurance programs. This divergence has been explored to some extent by the Council and it has been voted to ask the appropriate committees of the Association to study the present and the potentially desirable spheres of activity of the various types of underwriters and mechanisms in the field of voluntary health insurance. It is expected that these studies may establish a more clearly defined course which can be recognized and followed by the profession in the years ahead.

12. *Osteopathy.*

During 1960 the Council was advised by the Committee on Other Professions that the continuing discussions with representatives of the California Osteopathic Association had reached a point where specific proposals could be drafted for the consideration of both professional organizations for the unification of the two.

Reports have been made to the Council on the broad outlines of the program tentatively developed by the two organization committees and the Council has approved the continuation of discussions along these lines.

The California Osteopathic Association was confronted with the demand of the American Osteopathic Association to discontinue any discussions with the C.M.A. which might result in the discontinuance of recognition of osteopathy as a profession in California. Leaders of the osteopathic association prepared a series of committee reports on the various aspects of potential unification with medicine and called a special meeting of the C.O.A. House of Delegates to vote on the question of continuing discussions with the C.M.A. on pain of losing the charter issued by the American Osteopathic Association. The C.O.A. House of Delegates voted to continue such discussions and the national charter was subsequently withdrawn.

Prior to the time of the C.M.A. House of Delegates' 1961 meeting, complete details of the proposed plan are expected to be worked out and placed in the hands of all members of the House. A decision must then be reached on the continuation of discussions looking toward unification. If approved by the C.M.A., the same question will again go before the House of Delegates of the California Osteopathic Association. If approved there, the joint committees, together with others, will then proceed to develop plans for ultimate unification of the two professions in California.

13. *County Officers' Conference.*

At this writing plans are complete for the 1961 Conference of County Society Officers, to be held in Los Angeles in February. Invitations will go to the 1961 presidents, presidents-elect or vice-presidents, and secretaries of all county societies. Also to be invited will be two additional county society representatives who are members of the House of Delegates. In addition, the Commission on Medical Services is inviting the medical service committee chairman and the chairman of the mediation committee of each society to attend this conference. A program under the theme of "The Challenge to the Private Practice of Medicine" has been developed by a special committee of the Council and nationally-known speakers of outstanding ability have accepted invitations to appear. While the subject matter of this conference differs greatly from that of previous county officers' meetings, it is hoped that the leaders of medicine throughout the state may gather first-hand information from this meeting on the points of view of industry, labor, insurance and government on the subject of medical care.

* * *

The items outlined above constitute only a part of the considerations of the Council during the past year. It is hoped that the members of the House of Delegates will review the reports of the commissions and committees in this issue, all of which have come before the Council for consideration.

It is also hoped that all members of the House will feel free to attend the meetings of the reference committee where this report will be reviewed and will bring to those meetings all questions they may have on any item.

Respectfully submitted,

Samuel R. Sherman, *Chairman*

REPORT OF CALIFORNIA PHYSICIANS' SERVICE

To the President and the House of Delegates:

1960 has been a year of growth and accomplishment for California Physicians' Service. A number of new programs have been placed on the market for the first time. Experimental contracts with new benefit structures have been launched in various areas to develop actuarial experience and test market reactions. A broad new marketing policy has been put into effect. Major increases in membership, income, and claims payments have been achieved.

However, the year has not been without problems, some minor, some substantial, some continuing. But with the help of active and interested medical societies and physicians, C.P.S. has made many notable advances.

Although 1960 has been a year of research and innovation, the future promises to require even more. Public demand for the service concept is ever increasing, and medical science is advancing on all fronts. C.P.S., as our prepayment agency, must advance with it, so that the public may have ready access to the new techniques and case management patterns developed by medical research. It should be emphasized that C.P.S. is our mechanism. It is our responsibility to utilize it to lead the way in prepaid medical care.

It is an able and willing organization and we, of the Board of Trustees, feel that it has served both the public and the profession well during the past year. Some of the highlights of 1960 are noted below:

Physician Participation

During 1960 physician membership in C.P.S. increased substantially, with 14,500 now enrolled as C.P.S. Physician Members. As important as the numerical gain, perhaps, is the increased awareness of the meaning of C.P.S., and its significance to medicine, reflected by the more active support and participation in its affairs by physician members. This cooperation and involvement has been mutually beneficial. It is hoped that it will continue and grow.

Membership Status

At the end of 1960, membership in the commercial programs of California Physicians' Service stood at 971,068 persons. This represents an increase of about 25 per cent over the past year. Much of this increase can be attributed to the new Blue Shield Federal Employee Group Plan, for which C.P.S. handles the professional service coverage in California.

Financial Position

Dues income for the past year exceeded 41.5 million dollars. Claims payments for professional and hospital services rendered C.P.S. members exceeded 35.5 million dollars. In addition, another 18 million dollars in service costs were paid from government funds under programs of various governmental agencies for which C.P.S. serves as fiscal administrator.

Reserve funds at the end of the year totaled approximately 15 million dollars, a figure in line with the recommendations of the National Association of Blue Shield Plans and public regulatory agencies. This represents about four months operating costs.

Claims Handling, Advisory and Review Committee Activities

Medical directors have been discontinued in C.P.S. In their place, county or regional consultants are being appointed, who will be supervised by an over-all coordinator of medical consultants.

County Society Review Committees continued their cooperative aid in handling difficult and involved claims. These impartial committees rendered some 1,400 decisions on fee cases, complicated situations, and cases disputed by the member or physician.

New Benefit Structures

In response to resolutions passed at the 1960 C.M.A. House of Delegates meeting, C.P.S. has developed and placed on the market a number of new benefit variations.

Among these are the *Two-Unit Deductible Outpatient Medical Contracts.* After a trial in San Joaquin County, this program is now available to groups throughout California on a broad spectrum, though still on an experimental basis.

A program for individuals providing outpatient medical services, with a deductible and co-payment hospital feature, has been placed on the market. The plan has been announced to brokers appointed to market Individual Plan programs, and is now available throughout the state.

An experimental program providing hospitalization for diagnostic purposes has been developed and made available. This is the first C.P.S. contract to attempt coverage of this type. Actual experience with this program is being observed very closely with respect to both public acceptance and utilization costs.

In the continuing effort to improve coverage for retired persons and others no longer eligible for group benefits, C.P.S. has developed two new Continued Membership Programs, based on the "B" and "C" Fee Schedules. The old program based on the "A" Schedule is no longer economically sound and is no longer marketed. The new Continued Membership Programs also provide broadened x-ray and laboratory benefits outside the hospital.

An experimental *Home Nursing Care* program has been developed in collaboration with the Riverside County Medical Society and the Riverside Visiting Nurses Association, and is being made available to Riverside County groups.

Regional Programs

C.P.S. has continued its close cooperation with county medical societies throughout the state who are interested in developing special programs to meet regional needs. Foundation programs provided through C.P.S. are now in operation in San Joaquin, Kern, Fresno, Kings, San Bernardino, Orange, Mariposa, Merced, Tulare, Calaveras, Stanislaus, Tuolumne, Sonoma, Santa Clara, and San Diego counties. Individual programs written in conformance with Foundation wishes and standards have also been introduced in many of these counties. As of December 31, 1960, 11,302 contracts were covered under these various area arrangements.

The C.P.S.-Riverside County Plan based upon the "usual fee" of the area has continued to receive enthusiastic approval. A similar program for individuals has been developed and placed on the market for those ineligible for group membership.

The San Mateo County Medical Society has also adopted the "usual fee" approach and a C.P.S. program incorporating this feature is now in the process of enrollment.

C.M.A.-C.P.S. Liaison Committee

The work of this committee has proved most helpful to the C.P.S. Board of Trustees in implementing C.M.A. policy and the activities called for by the House of Delegates' resolutions. A word of sincere thanks is due to the House of Delegates for its foresight in appointing this committee, as well as to the committee itself for its forthright action during the year.

Federal Employee Health Plan

Enrollment under the new Federal Employee Health Plan was undertaken by the Federal Government in July, 1960. More than 61,000 employees chose the Blue Shield-Blue Cross Program in California. With enrolled dependents, about 180,000 persons are now covered by the plan within the state.

Specifically, out of a total of 545,000 federal employees and their dependents choosing one of the programs in California, 178,000 elected the Blue Cross-Blue Shield service program, 162,000 the indemnity plan, 61,000 employee organization plans, 144,000 one of the group practice and individual practice prepayment plans.

C.P.S. and the two California Blue Cross Plans, who jointly administer the Federal Employee program, spent months preparing authorized descriptive material and developing necessary administrative procedures for the program, which is considered a test case not only of the service concept, but also of the ability of private enterprise to meet the needs of the nation for prepaid health care. For these reasons, the efficient administration of the program in California is one of the major tasks and objectives of C.P.S. The future development of voluntary prepayment will depend to a significant degree upon how well this job is done.

Individual Programs Marketed Through Brokers

In 1960, for the first time, the C.P.S. Individual Family Programs were placed on the market exclusively through brokers and agents. The adoption of this marketing policy for the sale of the individual contracts followed as a logical step the successful marketing of the group contracts through these agencies.

New Trustees

Two new members joined the C.P.S. Board of Trustees during 1960. The newcomers, Herman H. Stone, M.D., Riverside, and William H. Thompson, M.D., San Mateo, are widely known in connection with their C.M.A. activities.

Communications with Medical Societies

In an effort to improve communications with component medical societies, summaries of C.P.S. Board actions are now submitted regularly to society executive secretaries, and items of interest are mailed periodically for use in society bulletins. These are but steps toward the objective we wish to achieve, namely, full two-way communication of significant information. A periodic newsletter, patterned after that of the C.M.A., is in the process of planning.

California Physicians' Insurance Corporation (Indemnity)

During the past year, C.P.I.C., the wholly owned subsidiary of C.P.S., has matured to the point where it operates as a well integrated and diversified health insurance carrier. It has been a year of consolidation, reappraisal and modest growth.

After careful study, C.P.I.C. placed on the market during the past year a number of new programs for the primary purpose of increasing its competitive position without sacrificing its broad objectives.

As of January 1st, 73,168 persons are covered under C.P.I.C.

Respectfully submitted,
John G. Morrison, *Chairman*
C.P.S. Board of Trustees

REPORTS OF COMMISSIONS

COMMISSION ON CANCER

To the President and the House of Delegates:

This report covers the activities of the Commission on Cancer for the year 1960-61.

There have been two meetings of the commission. The commission, in order to conform with the general organization plan of the C.M.A., has been reorganized with nine members and five committees. There has been no curtailment of established commission activities, but the reorganization and inauguration of new projects consumed considerable time and attention. Activities are summarized in the following categories:

Committee on Cancer Education: The committee met once in 1960-61. Fifteen cancer conferences were conducted during the year for 820 physicians; eleven for county medical societies and four for county chapters of the Academy of General Practice. This represents an increase over the past year. The conferences will be continued and efforts will be made to reach those areas which have not previously been adequately served.

The committee recommends republication of "Cancer Studies," a reference book on cancer for California physicians, last published in 1950. Funds for a portion of this project are included in the proposed budget.

"CA: A Bulletin of Cancer Progress" has been distributed to all physicians requesting the periodical, jointly by the California Medical Association and California Division of the American Cancer Society. Five thousand copies were distributed every two months.

Committee on Consultative Tumor Boards: Previous full approval of fifty-two Tumor Boards and provisional approval of sixteen was continued. Two provisional approvals were granted during the year. In 1961 the list will be extensively revised and published. The medical director personally surveyed twenty-six tumor boards in 1960.

Committee on New and Unproved Methods of Cancer Treatment: Senate Bill No. 194 is being administered by the Department of Health with advisory assistance from the commission. The first test of the law will occur in 1961.

Committee on Special Cancer Programs: The committee met once in 1960 to maintain liaison with professional and lay groups active in cancer control. An important 1960-project was direction and support in the professional aspects of the mass film showing of "Time and Two Women." The film was shown by the American Cancer Society to approximately 90,000 California women.

Committee on Tumor Tissue Registry: The registry has been very active. Its senior and junior study groups and two annual slide conferences contribute greatly to the accuracy and uniformity of pathological diagnosis, an essential and initial unit of cancer control. The feasibility of adding an audio digest tape to the study sets is being explored.

An article was published in the May 14, 1960 issue of the *Journal of the American Medical Association* (Vol. 173, No. 2), on the high validity of pathological diagnosis of breast cancer in California.

Because of the uniqueness and value of the registry, a history is being prepared.

American Cancer Society, California Division: In addition to the action of the immediately preceding committee, the medical director of the commission, who is also medical director of the cancer society, provided liaison and continuity of cancer control programs. The nine members of the commission who serve on the board of directors of the society provide similar service in policy making.

Joint programs of the two agencies include sponsorship of cancer conferences, distribution of "CA: A Bulletin of Cancer Progress" and support of the Tumor Tissue Registry.

Central Tumor Registry (California Department of Public Health): The Advisory Committee has met once and recommended continuation of the studies of why patients die from cancer of the skin and discontinuation of the registration of benign tumors. This registration was found to be so variable as to be valueless. Mention has been made earlier in this report of the publication of the paper on diagnosis of carcinoma of the breast.

In conclusion, the chairman expresses his appreciation to the members of the commission and committees on cancer for their diligent efforts and support and to the diligence and understanding of the Medical Director Dr. Eugene Miller, without which the progress briefly summarized in this report would not be possible.

Respectfully submitted,

Burt Davis, *Chairman*
Commission on Cancer

COMMISSION ON COMMUNITY HEALTH SERVICES

To the President and the House of Delegates:

The resolutions referred to this commission were its main topics of discussion at the meeting held early in 1960. Resolutions were referred to appropriate committees within the commission.

The Committee on Traffic Safety was made a standing committee and part of this commission.

Doctors Ruth Frary of Watsonville, and Francis Redewill, Jr., of Whittier, represented the commission at the Governor's Conference on Children and Youth at Asilomar in the fall.

Recommendations from the committees of the commission on resolutions referred to the various committees were considered by commission members by mail. The recommendations were then made to the Council by the commission chairman. This process has saved commission members time and C.M.A. money in carrying out the affairs of the commission.

Respectfully submitted,

James C. MacLaggan, *Chairman*
Commission on Community Health Services

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Committee on Allied Health Agencies

A suggested guide for the county medical society to follow in working with voluntary health agencies was prepared and distributed during 1960. It was suggested that local county medical societies establish a standing committee on allied health agencies.

The committee continues to receive information from the National Information Bureau regarding national voluntary health agencies and maintains a complete and detailed file on the programs of these organizations. This information is available, upon request, to any county medical society having need for such information.

Respectfully submitted,

James C. MacLaggan, *Chairman*
Committee on Allied Health Agencies

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Committee on Blood Banks

There has been one meeting of the Committee on Blood Banks since their last report to the House of Delegates. At this meeting the committee reviewed the reports from the blood banks operating in California and found that they all were complying with the standards adopted by the Council in January of 1958. The committee will continue to study the operation of these blood banks.

The committee has approved the format of a certificate to be issued to those blood banks complying with the standards. It is anticipated that these certificates will be ready for distribution to those approved blood banks within the near future and will be issued subsequently on an annual basis.

The members of the Committee on Blood Banks continue to be active members of the California Blood Bank System.

Respectfully submitted,

James Moore, *Chairman*
Committee on Blood Banks

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Committee on Disaster Medical Care

During 1960, the name of the Committee on Civil Defense and Disaster was changed to the Committee on Disaster Medical Care, and the membership of the committee increased to six members.

Drs. Wayne Chesbro, Frank F. Schade, and Justin J. Stein were reappointed by Governor Edmund P. Brown to the Governor's Emergency Medical Advisory Committee, with Dr. Justin J. Stein as chairman of the committee. This gives direct liaison between the medical profession and the California Disaster Office.

Invaluable training and medical disaster care information was obtained from test-exercises held throughout the state by local county medical societies. Members of the C.M.A. Committee on Disaster Medical Care were active in all of the test exercises, either as participants or as observers.

The first symposium on Disaster Medical Care was held during the 1960 Annual Session of the California Medical Association. The symposium was well received and attended. Plans have been completed for the second symposium to be held in conjunction with the 1961 Annual Session.

Drs. Robert Range, Wayne Chesbro and Justin J. Stein were given awards of merit for meritorious service to the people of the United States and the medical-health professions in civil defense and disaster medical care at the annual meeting of the United States Civil Defense Council in September, 1960.

Drs. Wayne Chesbro, Frank F. Schade and Justin J. Stein participated in the A.M.A. Conference on Disaster Medical Care, with Dr. Stein acting as conference chairman. Dr. Chesbro was named chairman for the 1961 A.M.A. Conference on Disaster Medical Care, and Dr. Justin J. Stein as program chairman for the medical part of the program of the 1961 Annual Meeting of the United States Civil Defense Council to be held in Los Angeles, October, 1961.

This committee is most fortunate in having all of its members so active and dedicated to the problems associated with disaster medical care. All the members have actively participated in some phase of this problem, either on the local, regional, state or national level.

It is anticipated that a great deal will be accomplished during 1961; also, that more effective support will be given to the county medical societies.

Respectfully submitted,
Justin J. Stein, *Chairman*
Committee on Disaster Medical Care

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Committee on Industrial Health

During the past year the name of this committee was changed from the Committee on Industrial Health to the Committee on Occupational Health by the Council. This was done to describe more accurately the activities of this committee, which are broader in scope than simply treating injuries and disease from industry. Occupational health refers to the employee's needs, both as an individual and as a worker; and includes the aspects of treatment, accident prevention, occupational disease control, work environment, human relations, rehabilitation, and preventive medicine (health maintenance). The American Medical Association and several State Medical Associations have similarly changed the name of their committees considering these same matters.

The work of the Subcommittee on Standardization of Joint Measurements in Industrial Cases, Packard Thurber, Sr., M.D., chairman, has been completed, and the 1960 edition has been published (Evaluation of Industrial Disability, Oxford University Press). A resume of the changes from the previous edition has appeared in California Medicine. This publication should be of great interest to all those working in the field of industrial medicine.

The committee has several projects under consideration, one of which is the publishing of a series of monthly articles in California Medicine dealing with the problems of occupational health. It is anticipated that this series will have its first article published within the very near future, and may stimulate a question and answer column in the journal as well.

Another project is the development of guidelines for county medical society committees on Occupational Health to assist them in the conduct of their committee activities and to stimulate formation of such committees where needed. In a preliminary survey of county medical societies, there was an indication that such guidelines were desired. It is hoped that these will be available within the near future.

A subcommittee is being established to study the relationship of heart disease to occupational exposure. Edward P. Luongo, M.D., was named chairman of this subcommittee.

During the past year a very close working liaison has been established with the Bureau of Occupational Health of the State Department of Public Health. This liaison has proved to be of great mutual benefit.

During the year, your chairman and the staff coordinator for the committee were privileged to attend the Annual Congress on Industrial Health, and the Joint Conference of Chairmen of State Committees on Industrial Health, held in Charlotte, North Carolina, under the auspices of the American Medical Association. This proved to be a most worthwhile meeting and, among other things, helped to strengthen the liaison between the A.M.A. Council on Occupational Medicine and the Committee on Occupational Health of the C.M.A.

An increase in the committee membership has occurred, due to the increasing activity of your committee.

Inquiries from the A.M.A. Council on Occupational Health, and from other states, have been answered promptly. Advice has been rendered to Riverside County in regard to developing their committee. Liaison has been established with the Committee on Legislation, in an attempt to be of assistance on matters within our field of interest.

Various members of your committee participated in the Fourth Annual Western Industrial Health Conference in San Francisco, October 1960, and are also contributing their efforts to the American Industrial Health Conference in April, 1961, at Los Angeles.

Respectfully submitted,
Packard Thurber, Jr., *Chairman*
Committee on Occupational Health

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Committee on Rural and Community Health

With the cooperation of the Rural Health Department of the California Farm Bureau Federation, your committee is planning a series of rural health conferences on a regional basis, rather than statewide as in previous years. Plans and topics for the conferences are made by the local representatives of the CFBF with the guidance of your committee. It is felt that this way, the attendees of the conference will hear discussed topics for which they feel a need and not something that is brought in from outside their region.

The medical representatives in each of these conferences are from the regions in which the conferences are held. This gives a closer feeling of cooperation between the medical profession and the conference attendees. Enthusiasm is high and it is expected that these conferences will be well received.

During 1960, a rather comprehensive study of domestic migrant agricultural workers' health needs and living needs was made by the Department of Public Health. The committee reviewed this report with the Committee on State Medical Services. This report and the Council recommendations are included in the annual report of the Committee on State Medical Services.

Respectfully submitted,
Robb Smith, *Chairman*
Committee on Community and Rural Health

Committee on School Health

The Committee on School Health has had an active program during 1960. The California Medical Association along with the California Teachers' Association and the State Department of Education co-sponsored a Workshop on Teacher Health which was held on November 17th and 18th. The participants of this workshop are leaders in their particular fields which included school administrators and board members, industrial, private and school physicians and other interested professional groups. The attendance was limited for the purpose of permitting intensive discussion by those persons well acquainted with the subject of teacher health.

As to what use will be made of the deliberations of this workshop and what effect it will have upon future teacher health programs is difficult to determine at this time. There seems to be no question that those who attended felt that the subject was explored in a way which has never been done before and which permitted much greater sharing of different attitudes than would be possible under any other type of approach. At the present time, the Committee on School Health is involved in summarizing the results of this workshop and recommending future activities in the area of teacher health.

Another matter of considerable concern to school health has been the recommendations of the Citizens' Advisory Commission on Education which have related particularly to health education, physical education and driver training. These recommendations were given thorough consideration and the California Medical Association Council was advised of the findings and recommendations of the Committee on School Health.

Another subject which has been a matter of concern to the Committee on School Health is the vision screening programs in California. This interest was stimulated by an extensive study which suggested that there should be significant changes in the screening methods. This problem has been and will be reviewed with considerable close scrutiny since it involves all the children in the public schools in California. At the present time the Committee on School Health does not have any specific recommendations to make on this matter but will be following the various programs with interest during the coming year.

Respectfully submitted,

Charles A. Branthaver, *Chairman*
Committee on School Health

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Committee on Traffic Safety

This committee is now a standing committee of the California Medical Association. Being one of the newer committees, it has found many areas where its attention is needed.

House of Delegates Resolution No. 9, calling for first-aid training of ambulance drivers, has been studied by the committee and referred to the Council for implementation.

House of Delegates Resolution No. 54, calling for the assistance of doctors of medicine to the Department of Motor Vehicles in the screening of motor vehicle operator's license applicants who may be subject to seizures causing loss of control of a motor vehicle, was studied by the committee and recommendation made to the Council.

The committee is currently studying a commercial motor vehicle operator's physical examination form.

A campaign to urge members of the organization to purchase and install seat belts in their automobiles is about to be implemented.

The committee enjoys good rapport with the Department of Public Health, with representatives of the Department of Motor Vehicles, and with the California Highway Patrol. It is working very closely with all of these state agencies.

Respectfully submitted,

Joseph F. Maguire, *Chairman*
Committee on Traffic Safety

COMMISSION ON MEDICAL EDUCATION

To the President and the House of Delegates:

The Commission on Medical Education has attempted to correlate the continuing education activities of the Association as far as possible.

The commission had one meeting during the past year, at which time it considered the matter of medical scholarships, and recommendations were made to the Council concerning this matter.

Your attention is directed to the reports of the committees serving under the commission, which indicate the wide scope of interest of this commission and its committees.

Respectfully submitted,

Albert C. Daniels, *Chairman*
Commission on Medical Education

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Committee on Maternal and Child Care

The Committee on Maternal and Child Care met twice during the past year.

As in the past, the bulk of the work done by this committee is accomplished by the diligence of our five District Maternal and Mortality committees. These committees meet at periodic intervals to give careful study to the maternal mortality that occurs in their districts. Without the eager cooperation of the district committees, the accomplishments of the Committee on Maternal and Child Care would be rather negligible.

Within the past year case reports have been submitted to the editor of California Medicine for publication. These case reports are actual cases studied by our committee and contain suggested procedures that could have been instituted to prevent the fatality. The committee is of the opinion that these case reports have great educational value.

It is anticipated that the work of this committee will continue, that additional case studies will be made and the results published for the edification of those physicians concerned with obstetrics. By so doing, it is the hope of the committee that the maternal mortality rate will be further decreased. The continuing working relationship with the Bureau of Maternal and Child Health of the California State Department of Public Health makes the activity of the committee possible. We are particularly indebted to Doctors Leslie Corsa and Theodore Montgomery of the Bureau for the assistance they have given the committee.

The Subcommittee on Infant Mortality unfortunately has been able only to have preliminary planning meetings during the year, and has not as yet established the program for studying infant mortality. It is anticipated, however, that this subcommittee will have its program well established within the next few months, now that several "roadblocks" have been eliminated.

A committee of the American Medical Association is also studying infant mortality and our subcommittee is maintaining liaison with this A.M.A. committee.

Respectfully submitted,

James W. Ravenscroft, *Chairman*
Committee on Maternal and Child Care

Committee on Postgraduate Activities

During the past year your Committee on Postgraduate Activities has continued the program underway since 1950.

An advisory group of district representatives assists the committee in its postgraduate efforts: E. F. Cain, Anaheim; G. Horace Coshow, Carpinteria; Patrick R. Allanson, Ukiah; Max Dunievitz, Auburn; Robert H. Quillinan, Sacramento; Robert S. Quinn, Santa Rosa; Campbell H. Covington, Selma; and Edwin W. Tucker, Monterey, continue to assist. These physicians have assisted the Postgraduate Activities Committee greatly in stimulating interest in their areas and bringing to our attention special problems and needs. There have been two meetings of the committee together with the district representatives during this period.

Regional Postgraduate Institutes: The committee has conducted five two-day Postgraduate Regional Institutes in five regions of the state, each comprising several county medical societies as follows: Southern counties at Palm Springs; North Coast counties at Santa Rosa; San Joaquin Valley counties at Yosemite; West Coast counties at Pebble Beach; Sacramento Valley counties at Lake Tahoe. The academic program at each institute is planned by one of the five medical schools in the state after consultations with the local regional committee representing the various county medical societies. These institutes offer a continuing interchange of professional experience between medical schools and practicing physicians, companionship and fellowship between colleagues, a combination for professional advancement.

The committee is especially indebted to the five medical school postgraduate directors and their fine faculties for the excellent programs they have fuurnished and to the regional institute chairmen: Robert M. Zweig, Riverside; H. Ward Wick, Santa Rosa; Campbell H. Covington, Selma; Robert H. Helfrich, Salinas; and Herbert W. Korngold, Sacramento.

Circuit Courses, consisting of lectures and conferences, and afternoon clinics in some cases, four in fall and four in spring, were given in the northern part of the state in Eureka, Ukiah, Napa, Dunsmuir, Chico, Marysville and Auburn, by faculty groups from the University of California and Stanford University Schools of Medicine. At the request of Shasta County Society, circuit courses in Redding were added beginning in fall, 1960. We are grateful to Dr. Farber and Dr. Roger Wilson of University of California and Dr. Rantz of Stanford University and their faculty members who arranged and presented the programs. Local chairmen for Circuit Courses are thanked for their continued cooperation. Several resident physicians accompanied instructors from the two schools on the circuit tours, this project supported by the C.M.A. public relations department.

Annual Session Postgraduate Courses: At the request of the Committee on Scientific Work, the Committee on Postgraduate Activities, with the cooperation of the three medical schools of Southern California, again organized postgraduate courses as a part of the scientific program of the California Medical Association annual session in Los Angeles, February 1960.

Motion Picture Program: Under the direction of Dr. Paul D. Foster, chairman of the motion picture division, ten film symposia were presented during the California Medical Association annual session. Attendance at the symposia ranged between 50 and 225, a total of over 1,200 physicians. The panel discussions have proved very popular with physician audiences and time for this portion has been increased. There were 37 discussants including 15 medical school teachers, 19 practicing physicians, two attorneys and one nurse—of these, seven were authors of films shown.

Medical Dates Bulletin, an ever-growing listing of all postgraduate courses and medical meetings in the state has been published by the committee for the past seven years. A grant by Wyeth Laboratories of $8,800, an increase over their grant of $6,000 in 1959, made it possible to publish and mail the listing monthly instead of bi-monthly, to approximately 2,500 organizations and hospitals in the state. In addition, *Medical Dates Bulletin* is mailed twice a year, January and September, to all California Medical Association members and is published monthly in CALIFORNIA MEDICINE.

Survey: A survey of all postgraduate courses and continuation educational meetings in California during 1959-60 was made for the ad hoc Committee on Scientific Activities and Continuing Education. The survey, soon to be published, shows tremendous activity and growth in this field and will be continued over the next 3 to 5 years.

The Committee was represented at the A.M.A. Congress on Medical Education in Chicago in February 1960 and at the Association of American Medical Colleges meeting in Miami in November 1960.

Activities of the committee will continue as in the past until advice is received from the Council for any modifications or changes recommended by the ad hoc Committee on Continuing Education and Scientific Activities.

Respectfully submitted,

ALBERT C. DANIELS, *Chairman*
Committee on Postgraduate Activities

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Committee on Scientific Work

The Committee on Scientific Work has met twice during the report period to discuss with the members of the various sections and others the format of the Annual Scientific Session. During these meetings the speakers for the general sessions were selected and the room assignments for the section meetings made.

At the invitation of Doctor Wilbur, chairman of the ad hoc Committee on Continuing Education and Scientific Activities, the members of the Committee on Scientific Work have met with his committee to discuss matters of mutual concern regarding the future of the C.M.A.'s role in continuing education.

The committee is grateful for the interest and cooperation of those section officers who have been of such assistance to the committee in planning the Annual Scientific Session.

The Committee on Scientific Work has also concerned itself with the scientific exhibits to be shown at the annual meeting. Many applications were reviewed, but because of space limitations only a relatively few could be accepted for showing at the annual meeting. It is the hope of the committee that in the future more space will be made available for the showing of scientific exhibits.

Respectfully submitted,

ALBERT C. DANIELS, *Chairman*
Committee on Scientific Work

COMMISSION ON MEDICAL SERVICES

To the President and the House of Delegates:

The Commission on Medical Services has functioned through its committees and the reports listed below are self-explanatory.

Two of the major programs of the commission this year have been to implement the House of Delegates action regarding the implementation of the usual fee indemnity concept and to strengthen the mediation committee concept within the county society structures.

The reports of the committees of the commission are listed below.

Respectfully submitted,

Donald C. Harrington, *Chairman*
Commission on Medical Services

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Committee on Aging

There has been only one meeting of the Committee on Aging during the report period, but individual members of the committee have been most active in participating in federal, state, and local meetings dealing with the problems of the aging.

Unfortunately, your chairman was not able to attend the Governor's Conference on Aging held in October, but several of the committee members were in attendance, as well as other physicians from many parts of the state. Because of the preliminary planning and the pertinent information that was supplied physicians prior to attending the meeting, medicine's voice was well heard and well received by the majority of those attending the conference.

Your chairman was privileged to attend the White House Conference on Aging in January, as an official delegate of the State of California. This was a most rewarding experience and I am happy to report that the physician delegates as well as many other of the California delegates, conducted themselves in such a manner as to make known to the conference in no uncertain terms the wishes and desires of Californians as they pertain to the problems of the aging.

The California Joint Council to Improve the Health Care of the Aged continues to very active and a member of our committee, Doctor Allan E. Voigt, has just started his second year as chairman of the Joint Council.

One of the major activities of the Joint Council during the past year has been to establish an accreditation program for Nursing Homes and Related Facilities. This program is about to get under way. In order to assist the administrators of Nursing Homes and Related Facilities to meet and maintain the standards established for accreditation, it is the opinion of the Joint Council that official liaison should be maintained with county medical societies. Guides to assist county medical societies in this project have been developed and sent to each society for implementation. Each county medical society is urged to participate actively in this program.

Because of the widespread interest in the problems of the aged, it is anticipated that the Committee on Aging will become increasingly active in this field. You may rest assured that the committee, both collectively and individually, will be active not only on your behalf but on the behalf of those aging individuals who need our attention.

Respectfully submitted,

Clarence H. Albaugh, *Chairman*
Committee on Aging

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Committee on Fees

The Committee on Fees has completed its major assignment with the revision and up-dating of the Relative Value Studies and a more detailed explanation of the committee's work is contained in the preface of the 1960 Revised Edition which has been sent to every member of the Association.

The committee is presently undertaking a pilot study of the relationship between the gross income and the costs of practice in the four categories listed in the Relative Value Studies—Medicine, Surgery, Radiology, and Laboratory.

The Committee on Fees is also working jointly with committees of C.P.S. in reviewing various schedules and assisting C.P.S. in revising and/or devising new schedules.

Respectfully submitted,

H. Dean Hoskins, *Chairman*
Committee on Fees

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Committee on Government Financed Medical Care

During the past year, this committee has kept in close contact with California Physicians' Service representatives who are acting as fiscal agents for the Veterans' Administration Hometown Care Program, the Department of Defense Medicare Program, and the various public assistance medical care programs of the State Department of Social Welfare.

In general, the Medicare and VA Hometown Care programs have been operating with a minimum of difficulty. Representatives of both the Department of Defense and the VA have advised that the administration of the program by the fiscal agent in California and the participation by California physicians has been excellent.

We have presented the 1960 Relative Value Study to both departments and requested that they seriously consider adopting the nomenclature and relativity set forth in the 1960 Relative Value Study. It is expected that in the year ahead these two programs will continue at approximately the same level they have maintained during the past year.

This committee, together with the Liaison Committee to the State Department of Social Welfare, has actively studied the implementation of the Mills-Kerr Bill by the California Department of Social Welfare. This program has been more completely discussed in the report of the Liaison Committee to the State Department of Social Welfare.

It is expected that during the coming year, both this committee and the Liaison Committee to the State Department of Social Welfare will closely follow the implementation of the Public Assistance Medical Care Program, the development of the Medical Assistance to the Aged Program and the research pilot study that is being conducted in connection with the health evaluation physical examinations.

I want to gratefully acknowledge the unselfish work of the committee members, Doctors A. E. Berman, Thomas Elmendorf, Ferrall Moore, William Quinn, Cyril Attwood, J. Lafe Ludwig, Samuel R. Sherman, Malcolm Todd, Donald Abbott, John Morrison, William Todd and John E. Vaughan.

Respectfully submitted,

John M. Rumsey, *Chairman*
Government Financed Medical Care

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Liaison Committee to the California Vocational Rehabilitation Service

This committee was appointed this year. It has held two meetings. The general purpose of this committee is:

(a) To be informed about the medical aspects of the Federal Old-Age Survivors' Disability Insurance (OASDI) program,

(b) To establish liaison with the California Vocational Rehabilitation Service since by contract with the Department of Health, Education and Welfare that Service is the administrative and investigative agency which reviews all applications under the program, and

(c) To develop a system to better educate the physicians in the medical processing of the program and reduce misunderstandings relative to it.

During the meetings to date, the committee has studied the background and provisions of the OASDI program and has met with representatives from the Vocational Rehabilitation Service to hear from them about the day-to-day operation of the program.

It is proposed that during the coming year a series of educational articles be prepared and distributed to the profession.

I am most grateful to Doctors Elliot Rouff, Elizabeth Austin, Mandel Sherman and William Todd for their fine assistance.

Respectfully submitted,

Francis J. Cox, *Chairman*
Liaison Committee to the California
Vocational Rehabilitation Service

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Liaison Committee to the State Department of Social Welfare

Since the last annual session, this committee has met three times to discuss the development of a public assistance medical care program in California. Two members of this committee are appointees on the Advisory Committee to the State Department of Social Welfare. One member of this committee, Doctor Samuel R. Sherman, was selected by the members of the Advisory Committee to be their chairman.

During the past year, the Congress passed the Mills-Kerr Bill, which amended the Social Security law to provide additional money to purchase further medical care for the aged. As a result of this legislation, it will be possible for California to increase the medical benefits for Old-Age Security (OAS) recipients substantially.

Advice concerning the additional medical care to be provided was sought of this committee and ad hoc advisory committees in specialized fields. The program now provides for eye care and glasses, and also for dental care. Early in 1961, the program will provide for elective office surgery and outpatient radiotherapy. Inpatient rehabilitation services will be provided for OAS recipients recommended by their personal physician in certain approved rehabilitation facilities. Approval of the facilities is based upon standards developed by the State Department of Public Health and an ad hoc committee. These standards were adopted by the State Social Welfare Board.

A health evaluation physical examination will be made available to all OAS recipients between the ages of 65 and 70 when they are certified to the program during a one-year pilot study. An ad hoc committee composed of internists and general practitioners developed a special report form to be used by physicians to report the results of these physical examinations. Space is provided for a narrative type of report with suggestions for treatment, prognosis, and additional comments where indicated, such as one might expect from a consultation by an internist where a $28.00 fee is paid. The special report form permits the information obtained to be easily and uniformly tabulated. The Department of Social Welfare has made application for a special research grant to enable it to study and report findings obtained by this one-year pilot study.

The House of Delegates passed a resolution at its last session recommending that the OAS drug program be expanded. With the availability of additional funds and after careful study by a Drug Advisory Committee, both the Liaison Committee and the Medical Care Advisory Committee have recommended to the department that the drug program be expanded.

The Mills-Kerr Bill provides matching federal funds to assist states in developing a program to provide medical assistance to the aged (MAA) who are not OAS recipients and who but for extensive medical expense would be able to maintain themselves on their available resources. This program cannot be implemented without enabling state legislation.

The Council adopted this committee's recommendation that California Physicians' Service (C.P.S.) investigate and report the possibility of underwriting the Medical Assistance to the Aged program on a prepaid basis, or handling it as a fiscal agent as is done for dependents of servicemen under the Medicare program.

This committee has kept the profession informed about these many developments through letters to county officers, articles in *Newsletter* and articles in California Medicine. This committee has been very active during the past year in reviewing the development of programs for the State Department of Social Welfare and for C.M.A. members.

I am very much indebted to Doctors Samuel Sherman, John Rumsey, John Morrison and Thomas Elmendorf for their untiring efforts and fine spirit of cooperation.

Respectfully submitted,

William F. Quinn, *Chairman*
Liaison Committee to the State
Department of Social Welfare

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Committee on Medical Care Insurance

In the reorganization of the Commission on Medical Services, it was decided to establish a new standing committee within the Association that would deal specifically with medical care insurance programs. An appropriate bylaw provision will be discussed by the Council to accomplish this.

The committee has established a number of subcommittees each of which will deal with a specific phase of the insurance movement.

Reports of these subcommittees are included as a part of this committee.

Respectfully submitted,

Donald C. Harrington, *Chairman*
Committee on Medical Care Insurance

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Subcommittee on Local Medical Society-Sponsored Programs

In 1959 the Commission on Medical Services established a Subcommittee on Foundations for Medical Care. The purpose of that Subcommittee was to serve as a central source of information from which any county society could obtain information on this type of program. In 1960 the name of this Subcommittee was changed to the Committee on Local Medical Society-Sponsored Programs.

Since there is now a greater variety of such programs in existence in California, Foundations for Medical Care have now been organized in 21 counties.* These Foundations have voluntarily grouped themselves into what is known as the Federation of Foundations for the purpose of making available Foundation-approved programs to the federal employees.

Other programs sponsored under the auspices of a county medical society include the usual fee concept, as typified by the program of the Riverside County Medical Association. All of these county society-sponsored programs encompass similar concepts such as local determination of fees and local control and processing of claims.

While not sponsored by a county medical society, the program of the Douglas Aircraft Corporation in Los Angeles was developed in cooperation with several of the district branches of that county society. The so-called San Fernando Valley Physicians Plan is also one which has the cooperation of local physicians.

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*Calaveras, Fresno, Imperial, Kern, Kings, Lake, Madera, Marin, Mariposa, Mendocino, Merced, Orange, Riverside, San Bernardino, San Diego, San Joaquin, Santa Clara, Sonoma, Stanislaus, Tulare, and Tuolumne.

The committee still continues to serve as a fact-finding body and information is available to any county medical society. The committee makes no recommendations regarding these plans.

Respectfully submitted,
JOHN F. MURRAY, *Chairman*
Subcommittee on Local Medical Society-Sponsored Programs

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Subcommittee on Miscellaneous Programs

The Committee on Miscellaneous Programs was established by the Commission on Medical Services to serve as a fact-finding body to develop information on programs within the state which do not utilize normal insurance criteria and which could be called unclassified and miscellaneous programs.

Outlined below are the various types of programs which the committee is beginning to study. All of these programs are used in some fashion in conjunction with the prepayment of medical care.

Consumer-Sponsored Medical Center Plans. This type of plan is lay-sponsored and is organized with the facilities provided by an employer or cooperative. The policy-making decisions, with respect to administration and financing and in many instances medical care provisions, are not controlled by physicians. Usually in this type of arrangement, the physicians are paid on a salary or a capitation basis. Examples of this would be the Community Health Association of Hoopa, California; San Diego Health Association and French Benefit Societies of Los Angeles and San Francisco. These plans are commonly called closed panel plans and are not open to all physicians nor the public. These plans are self-limiting as to source of patients and limit the diagnosis and/or treatment provisions according to the facilities and staff available. In many instances, they are composed of a medical director with part-time physicians.

Doctor-Sponsored. This type of plan is organized as an individual proprietaryship, partnership or corporation by physicians who provide their own facilities and retain control over the administrative and financial aspects as well as the medical aspects. Examples of this would be Ross-Loos and Bay Medical Group of San Francisco.

Company-Sponsored. Under this arrangement, a company or employer maintains clinic facilities and employs physicians on a whole or part-time basis on either a flat salary or hourly wage. Examples of this tvpe of plan would be the Pacific Electric Railway; Southern Pacific Railway; Santa Fe and the Metropolitan Transit Authority of Los Angeles and the Health Service System of San Francisco.

Union-Sponsored. This type of program is sponsored and controlled entirely by a union. The union owns the facilities, controls the management and financial arrangement and pays the physicians on either a salary or hourly basis. Usually the facilities and treatment are limited and not open to the public and many part-time physicians are used. Examples would be the International Lady Garment Workers Health Center in Los Angeles and the Health Center of the San Francisco Central Labor Council.

Open Panel Plan. This type of plan allows the consumer groups or their members to go to any licensed doctor but has special arrangements with certain doctors who in turn accept certain fee schedules as full payment for the full services rendered. In this arrangement, the employer or union controls only the financial aspects of the program. Examples of this are the Union Oil Company in Los Angeles; District Number 1578, International Association of Machinists; Retail Clerks Local Number 1442; Norse-Thermador Company; Packard-Bell Corporation; Pacific Mutual Life Insurance Company; Associated Tidewater Oil Company and various transportation companies and/or unions have this type of arrangement in Southern California.

Open Control Panels. These are panels of physicians that, in theory, are open to all licensed physicians that meet certain qualifications but that actually are limited or closed in most respects. Essentially they are established in such a manner that substantial reasons, mostly financial, are created that will steer most of the members of a group to the panel physicians. Payments are made to the participating doctors in agreement with a certain allowance as full payment. If a member goes to a nonparticipating or nonpanel doctor, he must pay the bill himself. In Southern California, examples of this could be cited as follows: Furniture Workers Local 123; The California Medical Center Plan; The Western Businessmen's Association in Norwalk.

Closed Panel Plan. These are programs under which the member has no benefits unless he goes to the contracting doctors or clinics. In some cases, there are payments provided for out-of-area coverage and for emergencies. Examples of this in Southern California are the Pacific Health Plan; the National Health Plan; California Health Association; Southern California Health Association; Osteopathic Physicians and Surgeons Medical Plan; Physicians and Surgeons Association and the Community Prepaid Medical Services, Inc.

Joint Sponsored Plans. This type of plan is usually co-sponsored by both labor and management using health and welfare funds to contract directly with medical groups and private practice. Examples of this type of plan are the MacDougal Medical Group in Long Beach; Ray E. Harris, M.D., and Associates of San Francisco. Other examples could be cited such as the Retail Clerks in Santa Monica and Gardena contract with four medical groups; industry in the San Fernando Valley contract with two medical groups.

Respectfully submitted,
HENRY GIBBONS, III, *Chairman*
Subcommittee on Miscellaneous Programs

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Subcommittee on Uniform Claim Forms

The Subcommittee on Uniform Claim Forms has, over the past year, devised a claim form which it considers to have merit and which could possibly be adopted by the Association for use statewide by physicians in reporting claims for their patients covered by indemnity insurance. The Health Insurance Council has been working on a similar project and has proposed a different form for adoption on a national basis.

The subcommittee has conducted pilot studies in five counties. In San Diego, Fresno and Ventura counties studies have been conducted with the claim form designed by this subcommittee. In Marin, Napa and Ventura counties pilot studies have been conducted with the form developed by the Health Insurance Council.

At the time of the writing of this report, the results of the pilot studies are being compiled and studied. Specific recommendations will be made to the Commission on Medical Services and to the Council before the meeting of the House of Delegates.

Respectfully submitted,
DUDLEY M. COBB, JR., *Chairman*
Subcommittee on Uniform Claim Forms

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Liaison Committee to the California Self-Insurers Association

Several months ago, at the suggestion of the California Self-Insurers Association, a Liaison Committee consisting of Doctors Elmer Gooel, Albert G. Miller and Milo A. Youel was designated to meet at periodic intervals with that Association.

The initial approach of this committee has been to establish individual contacts with our counterparts from the California Self-Insurers Association.

No meetings have been held at the time of the writing of this report; however, the California Self-Insurers Association is well aware of our interest and willingness to discuss mutual problems at any time.

Respectfully submitted,

Albert G. Miller, *Chairman*
Liaison Committee to the California Self-Insurers Association

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Liaison Committee to the Insurance Industry

The Commission on Medical Services has referred to this Liaison Committee three House of Delegates resolutions from the 1960 House of Delegates.

Resolution No. 47 dealing with the early payment of premiums has been considered by the committee and it is the committee's opinion that substituting the word "state" for national, as stated in the resolution, the resolution can be better implemented in California. The committee has contacted the Health Insurance Association and the Health Insurance Council and will discuss this resolution in more detail with the California Committee to the Health Insurance Council at subsequent meetings.

Resolution No. 48, Insurance Mediation Committees—The committee has appointed a subcommittee to adopt a modus operandi for county society mediation committees. A great deal of work has been done to stimulate a closer look at the functioning of these committees through the Medical Executives Conference and the Commission on Medical Services. A report on the standardized format will be made very shortly.

Resolution No. 65, Code of Insurance Standards—The committee is collecting data of examples of types of standards adopted by various county and state medical societies and will discuss this resolution with the California Committee to the Health Insurance Council.

At the present time, the committee cannot report in more detail regarding the implementing of the intent of the resolutions.

An Insurance Seminar is being planned in conjunction with the industry for this year to discuss mutual problems.

Joseph Telford, *Chairman*
Liaison Committee to the Insurance Industry

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Committee on Rehabilitation

The survey conducted by the Committee on Rehabilitation to ascertain physician opinion concerning the problems of rehabilitation has been completed and a final report has been submitted to the Council through the Commission on Medical Services. It is hoped that this report will receive wide distribution, as it is felt that it contains a great deal of valuable information.

It was quite evident from the survey that physicians desire more information concerning the rehabilitation problems, and especially they desire information as to the location of rehabilitation facilities and the criteria for admission to these facilities. There were indications also that it would be helpful for the Committee on Rehabilitation to intensify their activities in the field of professional education, and the committee is now giving this serious consideration.

Several members of your committee, including the chairman, served as individuals, not as members of the committee, on an Advisory Committee to the State Department of Public Health to establish criteria for rehabilitation facilities, that would be utilized by the Department of Social Welfare in their expanded medical care program for OAS recipients. These standards have been adopted and are now in operation.

The committee has considered proposed federal and state legislation dealing with rehabilitation and transmitted their opinions to the Commission on Medical Services.

The Committees on Rehabilitation of the county medical societies are conducting programs of varying intensity. Some are most active, but most are quite inactive. The committee urges each of the county medical societies to become active and offers to the county medical societies any assistance they can give in the problems encountered at the local level.

Respectfully submitted,

Elizabeth Austin, *Chairman*
Committee on Rehabilitation

COMMISSION ON PROFESSIONAL WELFARE

To the President and the House of Delegates:

During the past year, the members of the commission were kept advised of the activities of the committees under its supervision by written reports. It has not been necessary for the commission to hold a formal meeting.

Respectfully submitted,

Arthur A. Kirchner, *Chairman*
Commission on Professional Welfare

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Committee on Health and Accident Insurance

The House of Delegates has, on several occasions, encouraged this committee to extend disability benefits to members of the Association who are over 70 years of age. During the past year, the committee was very happy to report to the members of the Association that Lumbermen's Mutual Casualty, the underwriter for our disability insurance program, on June 1, 1960, agreed to allow insured members the opportunity of renewing their policies beyond the age of 70, at reduced benefits, provided they are actively engaged in their profession and are members of the C.M.A. The benefits are reduced by 50 per cent.

Also during the past year, a 10 per cent bonus effective December 1, 1959, was declared. Effective June 1, 1960, the monthly benefits available were increased from $400 to $800.

The committee has continued to review the disputed cases submitted to the company by our members. Annual reports are also made by the company to the committee of the loss experience. It is the hope of the committee that in the near future it may be possible due to the favorable loss experience of this program, to declare an annual dividend for those insured under the program.

I am indebted to Doctors Arthur Kirchner, Robert Westcott, T. W. Loring and George Herzog for their cooperation and hard work as members of this committee.

Respectfully submitted,

Homer C. Pheasant, *Chairman*
Committee on Health and Accident Insurance

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Committee on the Private Practice of Medicine by Medical School Faculty Members

In reporting the findings of the Committee on the Private Practice of Medicine by Medical School Faculty Members, several items of interest may be set forth along with the recommendations of the committee.

1. It is the firm general impression of the committee that the relationship between the administrative officers and faculties of the medical schools and the physicians carrying on private practice in the areas adjacent to these schools has shown a gratifyingly improved spirit of mutual understanding and cooperation. Where individual instances of misunderstanding have occurred during the past year, the difficulties have been largely clarified and resolved via conferences between county medical society liaison committees or individual physicians, and the medical school faculties. It is felt that the recommendations of the Wilbur Committee of 1957 have been cooperatively acted on in a mutually helpful manner to the advantage of all concerned.

2. In the area of publicity the committee again feels that there has developed understanding and cooperation. One writer for the press has commented that the medical schools in his area have "fallen over backwards" to observe compliance with this committee's previous recommendations.

3. In the matter of medical school faculty member's cost of private practice, where such practice is carried on within the medical school itself, it is our observation that such cost records and accounting are, where possible, satisfactorily maintained and that the costs are properly apportioned and borne by the practicing faculty members.

4. It has further been observed that the number of private cases seen by medical school faculty members who are on a geographic full time basis are relatively and surprisingly few.

In conclusion it is the opinion of the committee:

1. That the recommendations of the committee as originally outlined by the Wilbur Report of April 1957 should continue to stand as written at this time.

2. That when new medical schools are effected, the county medical society or societies in the areas adjacent to such new schools, immediately appoint liaison committees to work with the administration of the new schools, to bring about understanding and cooperation between the practicing profession of the area and the medical school faculty, as well as to aid development by all possible means the highest standards obtainable within the school, in scientific as well as student development.

3. That present liaison committees continue their obviously effective efforts and that all complaints be first submitted to the county liaison committee, for evaluation and recommendation.

4. That medical schools maintain meticulous care in follow up data to physicians in regard to referred cases—as to findings—recommendations and, where indicated, discussion of cost. By so doing much good will may be generated in case handling.

5. That as it is the medical profession's aim to preserve the private practice of medicine as well as the highest standards of medical education it would behoove our purpose to endorse a larger segment of private practice patients within the medical schools. That the degree of increase of private practice allowed faculty members be adjudicated by the medical school administration.

To the end that:

a. It would emphasize to the student the advantages of the individualized care of the patient in private practice.

b. It would preserve the private practice atmosphere and individualism in the mind of the medical school faculty member and his transmission of this to the student.

c. It would help place on a more realistic and comparatively equitable basis the medical school faculty member's income with that of the individual in the practicing profession at large.

d. It would gain for the medical school a better case load of teaching material, which latter is becoming a pressing need, due the present effect of prepaid medical care.

e. And lastly, it will not be forgotten that those engaged in the private practice of medicine have an obligation to perpetuate and support, in medical teaching and progress, that to which their own success has been attributable.

Respectfully submitted,

Werner F. Hoyt, *Chairman*
Committee on the Private Practice of Medicine
by Medical School Faculty Members

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Medical Review and Advisory Board

Since the last meeting of the House of Delegates, the Medical Review and Advisory Board has held two meetings with representatives from the California Hospital Association committee interested in medical-legal problems. These two committees have undertaken to prepare papers on several topics that are important to the medical profession. After the articles have been reviewed, they will be made available to the profession. The articles will cover such matters as tissue committee activities, a medical staff by-law requirement concerning staff members carrying adequate professional liability insurance; malpractice insurance for medical staff activities, recommended procedures for needle count, medication errors and identification problems, etc.

An educational article was approved by the committee and published in California Medicine advising the profession about current trends in malpractice cases. Several articles have been published during the year in California Medicine and in other bulletins which were sponsored by the legal counsel of C.M.A. and the Medical Review and Advisory Board.

Representatives of the M.R.A.B. took part in a two-day hospital medical-legal institute presented under the auspices of the California Hospital Association. The program included topics concerning joint hospital-physician liability problems. The institute was very well attended, with representatives from nearly all the major hospitals in the state.

During the coming year, the M.R.A.B. will assist the A.M.A. in conducting a regional conference on medical-legal problems in San Francisco.

The untiring work of the members of the committee, Doctors Kaiser, Powell, Webb, Yant, Adelstein, Burtness, Ginsburg, Ross, Moore, Quinn and Rees is gratefully acknowledged.

Respectfully submitted,

Arthur A. Kirchner, *Chairman*
Medical Review and Advisory Board

COMMISSION ON PUBLIC AGENCIES

To the President and the House of Delegates:

The Commission on Public Agencies has maintained close contact with its committees throughout the past year and has reviewed all recommendations made by committees under this commission prior to their submission to the Council.

The commission has been fortunate in that most of its deliberations have been conducted by telephone or mail ballot. Consequently, it has not been necessary to hold formal meetings of the commission. Nevertheless, it remains active and its members follow closely all programs developed by committees constituting the commission.

The reports of the various committees will speak for themselves.

Respectfully submitted,

Omer W. Wheeler, *Chairman*
Commission on Public Agencies

Committee on Adoptions

During the past year, the Committee on Adoptions had printed and sent to the members of our association, copies of a Manual of Adoptions for Physicians. Over 25,000 copies of this manual have been distributed to interested persons. The daily press of the state commented most favorably on this effort of C.M.A. to help stamp out the black market in babies.

The committee has followed with interest, two legal actions involving California physicians during the past year. A New York indictment involved two California physicians and others, charging a violation of the New York adoption law. Recently, one California physician has been indicted by a county grand jury of this state, along with several lawyers.

The Manual of Adoptions for Physicians points out that the function of the physician is to act as a confidant of the natural mother providing both medical care and social advice and to report on the physical and mental status of all parties concerned in an adoption proceeding if he is called upon to do so. Frequently, an obstetrician, pediatrician and family physician may all be involved in one or more stages of an adoption proceeding.

It has been pointed out that it is improper and unethical for a physician to function other than as a physician or to coerce any of the parties involved to follow one adoption proceeding rather than another.

The committee has studied several federal legislative proposals that were introduced into recent sessions of the Congress concerning the interstate placement of children for adoption.

During the coming year, it is anticipated that the committee will be called upon by county medical societies and others to consult and study adoption problems that may arise.

Doctors McNeil, McNulty, Walsh, Degenhardt, Fenlon, Beckh, Mapes and Tieche have been most cooperative and helpful in the deliberations of this committee.

Respectfully submitted,

George K. Herzog, Jr., *Chairman*
Committee on Adoptions

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Committee on Mental Health

During the past year, the committee has been concerned with numerous problems, one of the most pressing of which has been the place of hypnosis in medicine. The committee has heartily endorsed the 1960 House of Delegates Resolution No. 37 wherein the Association opposes the use of hypnosis for entertainment purposes. The committee has recommended to the Council that appropriate measures be taken, if possible, to prohibit the use of hypnosis for such purposes. Numerous questions dealing with this general subject have been discussed and in response to a request from the Office of Dependents Medical Care, the committee recommended to the Council that hypnosis be considered an adjunctive agent in the practice of medicine and merely a component of therapy, not a separate or individual method of treatment. An article will soon appear in California Medicine which will describe in detail the shortcomings and possible side effects of hypnosis and the need for further study on this subject.

The committee, in cooperation with the Western Interstate Council on Higher Education, is cooperating in a pilot program in the Sacramento area, aimed at familiarizing more physicians with the facts about psychiatry. The committee continues to hold periodic meetings with the California Psychological Association and hopes, in due time, to reach agreement with that organization on the relative roles of psychologists and psychiatrists in the field of mental health.

A closer working relationship is being developed with the Northern, Central and Southern California Psychiatric Societies to ensure a close cooperative functioning of these organizations with the state and county medical associations.

The committee continues its liaison with the State Department of Mental Hygiene and wishes to compliment Doctor Daniel Blain, director of that department, for his forthright and positive approach to the role of this state agency in the field of mental health.

Representatives of the committee have attended the National Conferences on Mental Health sponsored by the American Medical Association and we look forward to continuing California's representation at these meetings.

The committee in cooperation with California Physicians' Service is developing a program of insurance coverage for short periods of in-patient psychiatric care in accredited hospitals or accredited sanitariums. This new venture in the health insurance field will be tried on a pilot basis by C.P.S.

Our field is a challenging one. We like working with the problems involved. We hope that the results justify our efforts and your confidence in us.

Respectfully submitted,

Stuart C. Knox, *Chairman*
Committee on Mental Health

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Committee on Other Professions

During the current year, the Committee on Other Professions has met on one or more occasions, with representatives of the California State Nurses' Association, the California Pharmaceutical Association, and the California Osteopathic Association. Liaison has been maintained with the State Board of Nurses' Examiners by virtue of representation of two members of the committee on the Advisory Committee to the State Board of Nurses' Examiners. As directed in the Resolution No. 53, passed by the last meeting of the House of Delegates, the committee has conducted a survey of Hospital Nursing Training Schools in California and the results of this survey together with recommendations of the committee are incorporated in a separate report to be made available to each delegate.

During the year, a number of meetings were held with representatives of the California Osteopathic Association in an attempt to reach an agreement between the California Medical Association and the California Osteopathic Association to effect a merger of these two professions. An understanding has been reached which, it is felt, will be of mutual benefit to the public and to the professions involved. This agreement has the approval of the Council of the California Medical Association, and the corresponding governing body of the California Osteopathic Association, and will come before the House of Delegates of both organizations for consideration. A part of the solution of this proposed merger of the professions involves the conversion of the Los Angeles College of Osteopathic Physicians and Surgeons to an approved Medical School. The deans of the three medical schools in Southern California have been of invaluable assistance in attempting to reach a practical solution of the many aspects of the problems relating to the college. The Committee on Other Professions feels this proposed agreement provides a suitable solution to a complex problem of long standing and recommends its acceptance by the House of Delegates.

Respectfully submitted,

Wayne Pollock, *Chairman*
Committee on Other Professions

Committee of State Medical Services

The Committee of State Medical Services meets jointly with the Director of the State Department of Public Health and selected members of his staff. These meetings have become of increasing importance both to organized medicine and the State Health Department because of the ever-increasing responsibilities imposed by legislative acts and the rapid advance of medical science.

The State Committee of Medical Services has conferred with the Department of Public Health in matters dealing with air pollution, radiation control, insecticides, Tb and polio control, health problems of agricultural workers, hospital and rehabilitation center standards, alcohol and drug rehabilitation, national health survey and many other subjects of mutual interest to the department and organized medicine.

Our committee has recommended and the Council has approved the following:

1. A more aggressive polio vaccination program.
2. The establishment of a new committee on dangerous drugs.
3. A liaison committee between the State Pharmaceutical Association and the California Medical Association.

Dr. Malcolm Merrill, the State Director of Public Health, and your chairman of the Committee of State Medical Services have endeavored through monthly reports to keep the California Medical Association Council fully informed of all our activities.

Respectfully submitted,
Omer W. Wheeler, *Chairman*
Committee of State Medical Services

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Committee on Veterans' Affairs

Excellent rapport has been established with and is being maintained with veterans' groups such as the American Legion, Veterans of Foreign Wars, and Disabled American Veterans.

The committee is currently studying Veterans' Administration hospitals and the non-service connected admissions to these institutions. The committee continues to hold as its objectives the representation of the profession to those in the medical service of government and to the veterans' service organizations and to learn from government and veteran service organizations what it expects of medicine.

The committee continues to urge members of the medical professions to become more interested in the activities of the government in medical fields and local, state and national levels. And, for those persons who can, to join organizations available to them to represent medicine well.

Respectfully submitted,
Charles B. Hudson, *Chairman*
Committee on Veterans' Affairs

COMMISSION ON PUBLIC POLICY

To the President and the House of Delegates:

The Commission on Public Policy has concerned itself during the past year primarily with coordination of legislative activities and public relations activities. The commission has reviewed at the request of the Council several matters and made appropriate recommendations to the Council. The reports of the committees serving under the commission are noted below.

Respectfully submitted,
Dan O. Kilroy, *Chairman*
Commission on Public Policy

Committee on Legislation

Your Committee on Legislation has been active during the year 1960 primarily with interim sessions of committees in both houses of the legislature and with various campaigns in both the primary and general election.

A supplemental report will be rendered at the 1961 House of Delegates meeting of the California Medical Association.

Respectfully submitted,
Dan O. Kilroy, *Chairman*
Committee on Legislation

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Committee on Public Relations

The Committee on Public Relations is privileged to report a year of substantial progress and accomplishment. The rate of progress and the degree of accomplishment has been necessarily and properly limited by the requirements of the democratic process which governs this association and within which its committees operate and by the organizational and administrative problems inherent in a major effort of this magnitude. The committee has met regularly and reported to the Council which has approved its actions. It has had the full support and cooperation of the C.M.A. staff.

Broad Review of Three-Year Program

In 1958 the Council approved a broad three-year public relations program which will be completed by July 1961.

In the first year the objectives were to increase understanding among physicians of the factors underlying present problems in medical care, to emphasize that good public relations is good performance which is understood and appreciated and to establish the principle that what is best for the patient is always best for the doctor and the medical profession. Public relations therefore must always be expressed in terms of patient and public interest and not in terms of doctor interest, and be backed up by a record of performance.

In the second year the traditional doctor-patient relationship received greater emphasis. It was defined by the committee and identified as a critical element which must be present in the best medical care and which is absent in undesirable forms of collective medicine. The committee sought to extend its principles to relationship between organized medicine and the community or the public. It emphasized that the traditional methods of diagnosis, treatment, prevention and rehabilitation are as applicable to the socio-economic and political ills of medical care as to the ills of the flesh. The committee called attention to the vast number of meaningful contacts between medicine and the public, in doctors' offices, in hospitals, on telephone, radio, television and in the press, and recognized the enormous public relations influence of these built-in mass communications mechanisms of medicine. The principles of the doctor-patient relationship were equated with good public relations for medicine at all levels and it became clear that medicine's public relations program must therefore be "grass roots" and emphasize the role and activities of the physician and his staff as PR agents as well as of the local medical society in the community.

The objectives of the third year, 1960-61, were to clarify the role of medicine in the socio-economic and political evolution of our culture with relation to the concepts of freedom and security particularly as they relate to medical care and the welfare of the individual, and to emphasize that it is the public, the voter, who will decide the future of medical practice. Based on the foregoing, a position and dynamic program of public relations was to be undertaken.

Some Special Characteristics of Medicine's Public Relations

Medicine's public relations differs from advertising a product or from that of a business or industry. Everyone instinctively dislikes having to have medical care, yet there is a widespread interest, almost a preoccupation, with anything pertaining to medicine. This means that efforts at promotion or selling are often resented, yet public service or educational activities get widespread attention and publicity and at comparatively little cost. Fortunately these can be expressions of the doctor's interest in his patient and of organized medicine's interest in the community and in the public. Thus medicine's PR must be "grass roots" best medical care and public service, and, as in diagnosis and treatment, its position on socio-economic and political matters must be based upon a determination of the facts, sound decisions or policies expressed in the patient's interest, and demonstrated action or performance. Also public relations must utilize medicine's built-in mass communications mechanisms as well as more conventional mass communications media.

The Accelerated PR Program for 1960-61

The action of the 1960 House of Delegates which authorized an increase in C.M.A. dues of ten dollars per member to be added to the public relations budget enabled the Public Relations Committee and the Public Relations Department to undertake an accelerated program. The total program has been under the direction of the committee and its actions have been approved by the Council.

An initial step was to request of county and district component societies and of individual members their suggestions for the C.M.A. accelerated PR program. Some hundreds were received. These were compiled, and together with suggestions from the C.M.A. staff were rated in importance by the committee. They became the basic material upon which the program is built. A large number of excellent suggestions were necessarily set aside because of limitations in budget and personnel. It was decided that for the first year of the accelerated program the major emphasis would be given to television programs, public service programs at the county society level, pamphlets and brochures, and the development of new PR programs and projects for use at county and state level.

The following basic principles were agreed upon:

1. The primary aim of the public relations program is to create a public image of the physician and organized medicine which will be such that the public will listen to organized medicine in the same way a satisfied patient listens to his doctor.

2. In general, the socio-economic messages of organized medicine are better presented through others until such time as No. 1 is achieved. It is understood that a maximum effort will be made to develop this indirect approach initially at C.M.A. level.

A Subcommittee on Television, Radio, and Motion Pictures under the chairmanship of Dr. John Schaupp was appointed by the Council and directed to produce a series of 26 half-hour programs, entitled "Doctors at Work." Studies have shown that approximately 70 per cent of people form impressions of, say, a business or industry, from television. Other mass communications media are considerably less effective. The "Doctors at Work" series as developed by the subcommittee provides an ideal device to emphasize the doctor-patient relationship, to demonstrate the personalized services rendered by doctors to patients to show the complexity of medical practice and modern medical care, and to identify the county and state medical association with the favorable image of the individual physician working for his individual patient. The subcommittee was directed to include emphasis on socio-economic factors to the point of public and station tolerance as recommended by its TV consultants. In addition five educational programs on socio-economic subjects were approved for inclusion in the series. Larry Williams and staff of San Francisco and Jerry Pettis of Los Angeles were retained as TV consultants. The public acceptance of this series is not known at the time this report is submitted.

A Subcommittee on County Society Programs, under the chairmanship of Dr. Douglas Donath was appointed by the Council and directed to encourage and assist county public relations programs primarily directed toward maintaining and improving a favorable public image of the physician and organized medicine. The initial goal for this year has been to achieve the activation of two or three new programs in each county society—or approximately 100 new programs throughout the state. The programs recommended for this purpose have been tried somewhere in the state and are known to be effective. The PR staff has developed materials to assist the county societies with these new projects. It is anticipated that the proliferation of these programs will have important impact.

The Public Relations Committee has divided itself into four project development subcommittees to develop further (1) the socio-economic facet of the PR program, (2) liaison with and support of other groups which have common interests with medicine, (3) pamphlets, brochures and publicity for professional and public audiences and (4) projects and programs related to students in schools, colleges and medical schools. It is anticipated that projects developed by these subcommittees and approved by the Public Relations Committee will be activated at the state level or recommended to county societies with appropriate material through the Subcommittee on County Society Programs.

C.M.A. staff members have been assigned liaison responsibilities with specific county societies which are geographically contiguous and these individuals work closely with the Subcommittee on County Society Programs and with the PR department. Mr. Bill Tobitt has been added to the PR staff with special responsibilities to the Subcommittee on Radio, Television and Motion Pictures and for news releases and pamphlet preparations. Mr. Murray Klutch has joined the staff for the Bureau of Research and Planning and will be available to the Public Relations Committee. Mr. Clancy and Mr. Marvin have devoted full time to PR activities.

Pamphlets, brochures and circulars continue to be an important part of the C.M.A. PR program. "The Best Medical Care for Every Individual—A Public Relations Challenge" was prepared to provide the profession with a definition of PR goals and how they may be achieved. It was widely distributed and well received. Over a million tetanus circulars were ordered by physicians for distribution to the public, 550,000 Forand Bill circulars were printed to fill physicians' orders in cooperation with the Public Health League. A recent pamphlet "About the Cost of Medical Care" is being accorded widespread acceptance by the profession and the public. Other brochures and pamphlets are under development at the time of this report.

News releases from C.M.A. have been accelerated and press cooperation in reporting medical advances and bringing medical service programs to the public has generally been excellent. Each month an article from CALIFORNIA MEDICINE has been summarized and presented as a press release from C.M.A. There has been noteworthy cooperation by the press with many society programs for the prevention of polio and tetanus.

Effective communications with the membership continue to be a major concern of the PR program. This is necessary if the members are to be effective PR agents. "Newsletter" has been published monthly and is widely read. The president or president-elect have met with each county society and the councilors have recognized the importance of their role in communications with the membership. Special issues of "Newsletter" devoted to socio-economic subjects were authorized by the committee and are in development at the time of this report.

The Governor's Conference on Aging provided valuable experience in public relations at the sociological level. It was demonstrated that individual physicians, armed with the facts, with a firm organizational policy expressed in the patient and public interest and with a record of performance in support of a sound policy, can exercise an enormous influence on group opinion and group action. Prior to the conference the public relations committee urged that the Council adopt a clear statement of policy on aging. This was done and the background facts were prepared by C.M.A. staff. The record of performance was epitomized in the successful A.M.A. support of the Mills Bill. The result was that none of the 50 sections of the Governor's conference came out in support of the social security approach to medical care for the aged. This experience demonstrated the principles—facts, policy and performance—which must always underlie the successful PR exploitation of C.M.A. activities in the socio-economic field. The doctor-patient relationship was a reality at this conference. The principles of diagnosis and treatment were applied. Also some of the most effective presentations of medicine's arguments were made by others outside the profession.

The committee continued its support of county society programs directed toward medical students, interns and residents in San Francisco and Los Angeles. It is working closely with the Santa Clara and San Mateo societies to develop a comparable program centered on the new Stanford Medical Center in Palo Alto. At the collegiate level materials prepared by the A.M.A. for the national collegiate debating topic for 1960-61, "Resolved: That the United States should adopt a program of compulsory health insurance for all citizens" were distributed personally by physicians to colleges in the state. In several areas well informed physicians discussed this topic with the debaters. It is anticipated that other programs directed toward students in high school and college will soon be developed. These are the voters of tomorrow. Also they are the pool from which future doctors must come.

The Woman's Auxiliary, at the state and county level, have continued to render outstanding assistance in nurse recruitment, nursing scholarships, aid to medical education, meals-on-wheels projects, etc. Several auxiliaries have reviewed "Honour a Physician" for various women's groups. This book, written by an English general practitioner, emphasizes the inadequacies of the socialized medicine system and particularly the breakdown in the physician-patient relationships. The committee is fully aware of the power of these women and their effectiveness in public relations.

Finances—1960-61

The committee found that the funds available for the 1960-61 program were appropriate in amount. The committee exercised its best judgment in their use and believes that the profession will receive a satisfactory return on their investment in public relations for this year. All expenditures, not of an administrative nature, were approved and authorized by a "watch-dog" committee and the chairman of the Public Relations Committee. This proved a most satisfactory arrangement. A meaningful report of the 1960-61 PR budget expenditures is not possible at the time of this report but will be available to the Reference Committees and to the House of Delegates at the 1961 meeting.

Finally, the chairman requests the privilege of presenting a supplemental report to the House of Delegates at the annual meeting and of submitting the following at a later date as appendages to this report:

1. A report on the television series "Doctors at Work."
2. A report on county society programs.
3. A report on the 1960-61 PR budget.

Respectfully submitted,

Malcolm S. M. Watts, *Chairman*
Committee on Public Relations

JUDICIAL COMMISSION

To the President and the House of Delegates:

The Judicial Commission has been called upon to review only one disciplinary case in the past year. This case has been completed, the county judicial council ruling upheld and no appeal taken by the member to the Judicial Council of the American Medical Association.

Unfortunately, a great deal of time is required in advance of a hearing of a county judicial council decision. It is essential that the members of the Judicial Commission review the transcript of the county society hearing in order to familiarize themselves with the case. This can be done much more expeditiously if the county societies will advise the central office that disciplinary hearings are to be held. In this way the Association may be able to secure additional copies of the transcript and thus speed up the review procedure.

Respectfully submitted,

Donald A. Charnock, *Chairman*
Judicial Commission

REPORTS OF OTHER COMMITTEES

BUREAU OF RESEARCH AND PLANNING

To the President and the House of Delegates:

In presenting the annual report of the Bureau of Research and Planning it is timely that a somewhat comprehensive outline be submitted in relation to:

I. The origin and formation of the bureau.
II. Its place within the organization structure of C.M.A.
III. Its purpose and responsibilities.
IV. A summary of its actions to date.

I. *Origin:*

At the annual meeting of the House of Delegates in April 1958 a resolution was passed directing the Council to expedite the creation and establishment of a department of Research and Planning. In July of 1958 the Council implemented this mandate by appointing an ad hoc committee to review the matter and present specific recommendations to the Council. This ad hoc committee met in July of 1958 in Palo Alto. Its report was submitted to the Council and in March of 1959 the Council made appointments officially establishing the Bureau of Research and Planning. Following this, the first organizational meeting of the bureau was held in Los Angeles on March 13, 1959.

II. *The Bureau's Place Within the Organizational Structure of C.M.A.:*

The ad hoc committee recommended:

(a) That the bureau should be integrated within the C.M.A. administrative structure.

(b) That the bureau be answerable to the Council.

(c) That its members be appointed for a period of five years instead of the usual three years because of the complexity and scope of the problems involved in its areas of study.

(d) That research requests of other commissions or committees be forwarded to the bureau who in turn will decide priority. Findings should not be published other than with the clearance of the Council.

III. *Purposes and Responsibilities:*

The ad hoc committee recommended:

(a) That the basic economic objective was the preservation of private practice of medicine.

(b) That a library adequate to research needs be established under direction of a competent librarian.

(c) That a full-time research director of adequate background and orientation be found to assist in organizing an overall research program for the Association and to implement this program as directed. The ad hoc committee further recommended to the Council that:

1. The primary function would be to determine types in order of priority of research projects in relation to its contribution to public welfare, importance to C.M.A., benefit to C.M.A. members, length of time required, and cost.
2. To recommend to the appropriate commission or the Council when a specific research or planning project should be discontinued.
3. To develop an annual Research and Planning budget in cooperation with the Director of Research and Director of Commissions and Committees.
4. To review and recommend to the Council for approval or disapproval all research reports before release to any source.
5. Develop and initiate long range plans and programs.
6. Research findings would be forwarded to the originating commission and the Council.
7. In case of conflicting research requests in terms of time, cost, personnel and other factors, the final priority determination should be referred to the Council.

IV. *Summary of Actions:*

With this background data the activity and work of the bureau to date may be outlined.

The first regular meeting of the bureau was called by the chairman, Dr. Francis E. West in Los Angeles on March 13, 1959. Following meetings of the bureau during 1959 covered organizational efforts needed to implement the directions of the ad hoc committee adopted by the Council.

A graduate librarian of excellent background, Miss Jean Chadwick, was asked to organize material essential to the bureau's research and study. Miss Chadwick under direction of the Director of Commissions and Committees has accomplished this major step in the bureau's behalf and the library is now filling its proper function in the work of the commissions, committees, Council and the bureau. Further work accomplished during 1959 covered many hours of discussion as to the bureau's orientation in the wide scope of its assignment in the entire socio-economic field and in which lie the problems faced by medicine in its need to adapt to change. Priority of study areas both of acute need and for long range planning were reviewed. Some of the study areas considered were adaptable to research techniques and some others were based on judgment in policy, maturity, medical experience and philosophy.

The bureau has discussed the areas listed below in order to determine specific research projects and priorities.

1. *The Insurance Mechanism:*

Study of the origin and development of voluntary health insurance; concepts and philosophies underlying approaches by medicine, management, labor, government, and other groups within the community. Analysis of various problem areas such as remuneration, extent of coverage and quality of medical care; review of mechanisms designed to meet increasing demands and costs of medical care; examination of form and organization of medical practice as they relate to the prepayment mechanism.

2. *Education:*

(a) *Personnel:* Study of the role of all medical and paramedical personnel in the growing complex of medical care; their training, education and supply in relationship to expanded horizons of care.

(b) *Curriculum:* Review of teaching methods and courses as they have evolved, and should be modified, to equip all medical personnel for their roles in the constellation of medical care.

(c) *Health Education:* Study of the variety of techniques through which health education, including mental; physical fitness, environmental, etc., may be dispersed to all levels of the community, utilizing the training and experience of medical personnel.

3. *Organization and Distribution of Medical Services:*

Study of all facets relating to supply and forms of medical practice, including facilities utilized; new concepts and philosophies to deal with problems of the future.

4. *Communication:*

Study of the methods and techniques to communicate with the public and profession regarding their respective obligations and responsibilities in the attainment of good health. Development of new approaches to create a better atmosphere of understanding.

5. *Historical, Philosophical and Sociological Concepts:*

Study of the diverse forces and philosophies impinging upon, and often motivating or compelling, the development of medical practice; changing concepts of social welfare, government interest, labor-management relationships and professional responsibilities.

6. *Membership Relations:*

Study of all aspects of relationships between physicians in practice and their organizational structure; analysis of needs expressed by each and development of levels of uniform approaches to problems of community concern. Study of membership characteristics to enable intensive study of attitudes towards various problems and issues of medical care.

7. *Labor:*

Analysis of labor's philosophy and demands as they affect all aspects of the socio-economics of medical care.

8. *Rehabilitation:*

Study of the roles of restoration and rehabilitation in the spectrum of medical care; contributions of physicians and paramedical personnel; facilities utilized and required, and creation of public understanding of the outer limits of application.

9. *Quality of Medical Care:*

Study of criteria for determining levels and standards of medical care; methods of evaluating care provided by physicians in various forms of medical practice and assuring provision of good medical care to the public.

10. *Political Implications:*

Study of profession's attitude toward, and relationships to government proposals and direct interest in medical care. Development of broad policy to relate to individual legislators and administrative agencies.

11. *State Study Bureaus:*

Examination of feasibility of expanding research efforts to all constituent associations, promoting cooperative research and stimulating more widespread interest in the values of objective research as an instrument in developing a cohesive, uniform and realistic approach to problems.

12. *Preventive Medicine:*

Study of the role of physicians, the application of preventive medicine in their practice and the promotion of more effective methods to identify professional interest with public concern.

During early 1960 the Council requested that the Bureau of Research and Planning study and recommend guide lines of philosophy and principles which C.M.A. can support as to:

(a) What medical services are the proper responsibility of government;

(b) By which level of government (federal, state, county, or city) should these services be provided;

(c) For which classes of citizens they should be provided.

This study was carried out by Drs. Powell, Davis, and Morrison. Their report was discussed and approved by the bureau and submitted to the Council.

Later meetings during the year in coordination with C.M.A. staff have consummated the establishment of a research department under a director of research, Mr. Murray Klutch, who in December 1960, became a member of the C.M.A. staff. Mr. Klutch has already prepared a program of objectives adaptable to research techniques and their possible means of accomplishment. His entire program will be reviewed and coordinated with study areas already outlined, during January 1961.

The bureau has now developed a research policy and a course of action. During the past two-year period, a reference library has been established in the San Francisco office of the Association under the direction of a professional librarian. It is the only such library in the West.

At the time the bureau was formed, there was no other single organization or agency, governmental or private, sponsoring research of any magnitude or directed at seeking factual unbiased information which would help the C.M.A. reach sound conclusions and develop constructive farsighted policies. Although neither the Association nor the bureau had a clearly delineated research policy, the House of Delegates indicated that adequate financing would be made available. The House also indicated a desire in developing a program in the public and professional interest. Essentially, four approaches to carrying out research have been evolved. They are:

1. Projects to be carried out under the supervision of the bureau and conducted by the staff.
2. Cooperative research with other organizations or agencies, with publication of the findings obtained.
3. Securing research grants for selected studies to be under the direction of the bureau but to be done in part by an outside agency.
4. Projects which students working on doctoral theses can undertake with a minimum of financial assistance from the bureau.

The methods described above offer flexibility of operation and require only a small staff within the department of research. The research proposals which the bureau has recommended are those which can be done on a short term basis of six months to two years duration. Long term projects are also under consideration. Many of the objectives of medicine can be implemented through the research staff by having them serve as consultants to other organizations in their research efforts.

In order for the work of the bureau and its research efforts to be accepted by persons outside the profession, it is important that our efforts be made known, that our methodology and interpretation of data be made public and that the results of our efforts be made available to interested parties.

A research advisory committee composed of research technicians will be established to secure advice and guidance on methodology and survey techniques.

The bureau budget which will be proposed will reflect the necessary growth within the research department and the cost of conducting medical-economic research. The California Medical Association is the first state medical organization to embark upon this type of project.

In planning for 1961 the bureau will direct its effort towards a number of goals:

1. Establish direction and priority of research projects under guidance of the director of research—this in relation to the request of the Council—Commissions and committees and the work of the bureau itself.
2. Attempt to effect a closer liaison with its own work and the work of other commissions and committees.
3. Develop emphasis on study of the insurance mechanism because of the urgency and inclusiveness of content in this vital study area.
4. Regularly bring to its meetings, men of talent, who may point out pertinent data to study areas under consideration.

The bureau wishes to express its appreciation to the House of Delegates for its confidence in, and support of, the efforts being made to carry out the objectives of the medical profession in California.

Respectfully submitted,

Werner F. Hoyt, *Chairman*
T. Eric Reynolds, *Vice-Chairman*
Gerald W. Shaw, *Secretary*
Burt L. Davis
Paul D. Foster
James Powell
Donald C. Harrington
Francis J. Cox
Arlo A. Morrison
Lyle Craig
Bureau of Research and Planning

CHAIRMAN OF THE CALIFORNIA DELEGATION TO THE A.M.A.

To the President and the House of Delegates:

The two meetings in 1960 were attended by practically 100 per cent of our delegates and 100 per cent of our alternates. California still has representative doctors on practically all of the major councils and committees and standing committees of the American Medical Association and as in the past they have been doing a yeoman job of constructive work. Your delegates met each morning for breakfast and discussed the business of the day. They attended the meetings of the House of Delegates, the meetings of the Reference Committees and the California Hospitality Group entertained continuously at lunch throughout the convention.

The New York Delegation was especially anxious to entertain California Delegates but this was also true of the Acey Deucy Group, that is the group made up of those delegates from states who have not more than two delegates.

Dr. Askey, as president of the American Medical Association, made a statesmanlike speech which will be printed in the *Journal of the American Medical Association.*

Dr. James Doyle of California served on the Reference Committee on the Board of Trustees Reports.

Dr. R. Stanley Kneeshaw of California served on the Credentials Committee.

Dr. Leopold Fraser of Oakland, California, was Chairman of the Important Reference Committee on Public Health and Occupational Health.

Your chairman, Dr. Cass, served on the Reference Committee on Insurance and Medical Service.

Dr. Dwight Wilbur of California served on the Reference Committee on Medical Education in Hospitals.

Dr. Joseph Failing of the Section on Anesthesiology, also from California, was on the Reference Committee on Sections and Section Work.

Both the June and December meetings were very successful in accomplishing a great deal in the matter of establishing policy and in December a considerable amount of discussion was held over the impact of the National Elections on the future of medicine. This will all be explained in the American Medical Association and in our report of our Public Relations Department.

At the end of the session your delegates elected Dr. Dwight Wilbur of San Francisco as the new chairman of the delegation and Dr. Donald Charnock of Los Angeles as the vice-chairman.

It has been a pleasure to have served as chairman of this group for several years and I am sure that California will be able to maintain its present position of prestige in the House of Delegates of the A.M.A. under the leadership of Dr. Wilbur and Dr. Charnock.

Respectfully submitted,

Donald Cass, *Chairman*
Delegates to the A.M.A.

COMMITTEE ON HISTORY AND OBITUARIES

To the President and the House of Delegates:

Since the last annual report, 154 obituaries of departed fellow practitioners were published in California Medicine during 1960. Of this number 29 had passed away late in 1959.

Perusal of the long list of deceased reveals the names of many teachers, prominent leaders in the various specialties and others high in their particular fields of medicine who will be missed by their confrères. Probably the widest recognition goes to Robert T. Legge, known to many University of California students as University Physician on the Berkeley campus for many years.

Respectfully submitted,

J. Marion Read, *Chairman*
Committee on History and Obituaries

FINANCE COMMITTEE

To the President and the House of Delegates:

The Finance Committee is actually a committee of the Council and as such reports to that body. However, its functions are so intimately tied in with the activities of the Association that the committee wishes to make this report to the House of Delegates.

On a succeeding page of this issue will be found the statements of assets and liabilities and of operating results for the fiscal year ended June 30, 1960, for the Association, the Trustees of the California Medical Association and Physicians' Benevolence Fund, Inc. These are prepared from the reports of John F. Forbes & Company, certified public accountants. These subsidiary corporations operate under the supervision of the Council and the members it names as a board of directors or board of trustees for the corporations. In addition, Audio-Digest Foundation and Pacific Magnetic Tape Equipment Co. are wholly-owned subsidiaries.

During the fiscal year reviewed in the printed reports the Association moved into its present quarters at 693 Sutter Street, San Francisco. This involved the occupancy of considerably more floor area than had been available in the former location and also involved the purchase of a sizable amount of furniture and equipment. These purchases are reflected in the cost items shown in the Association's operating statement. The rental figures on this statement will remain at the level shown or will advance as the Association occupies more space in the building. The equipment costs are, for the main part, a nonrecurring item. The budget for the coming fiscal year will reflect a sharp decrease in this category.

As reported a year ago, the committee asked the auditors to review the membership and bookkeeping procedures in use by the Association. Since that report was made, the auditors' report has been received and reviewed by the committee. It was found that the basic procedures in use were adequate and efficient for our operation. Several suggestions for reducing the work load and for simplification of bookkeeping methods were suggested and have been put into effect. In addition, some new equipment will be purchased as a means of meeting the ever-growing needs in the membership records work. This equipment will provide for our needs for several years in advance and will be suitable for further expansion as the membership growth warrants.

The committee has held several meetings during the year and has reported to the Council on all items referred to it by the Council and on other items of its own origin. Reports made to the Council have been published in the Council minutes.

During the past year the committee has investigated the possibility of establishing a retirement program for employees of the Association. Retirement plans are so universally a part of employment today that the committee has recommended that such a plan be instituted in the C.M.A. At present the Trustees carry life insurance policies on several key employees. While this coverage is good as far as it goes, it is costly and it does not operate with justice to all employees or to those not now covered.

An extension of the present plan was reviewed and submitted to outside experts, who were of the opinion that a more equitable and less costly plan could be developed through the use of group retirement annuities and group life insurance. Proposals for this type of coverage are under study and, with Council approval, will be instituted in 1961. Interestingly, the cost of this program will be less than that of the current program, the number of employees covered will be greater and the benefits to employees will be greater.

The committee has also approved the formation of a subsidiary corporation which would serve as a sales agency for some of the publications of the Association. Publications such as the Relative Value Studies and the fee schedule of the Industrial Accident Commission have heretofore been distributed widely at the expense of the C.M.A. The new corporation would permit the sale of such publications as a means of recovering some of their cost. At the same time, as an activity of a subsidiary company, such sales would not jeopardize the professional association status of the Association.

One member of the committee, Doctor Byron L. Gifford of Santa Barbara, resigned during the year for health reasons. He has been succeeded by Doctor J. Norman O'Neill of Los Angeles. The other members of the committee, in whose behalf this report is submitted, arc Doctors Paul D. Foster, Ralph C. Teall, Burt L. Davis and the chairman.

Respectfully submitted,

Ivan C. Heron, *Chairman*
Finance Committee

CALIFORNIA MEDICAL ASSOCIATION

Statement of Net Assets, June 30, 1960

ASSETS:		
Cash		$161,298.18
Accounts receivable, net		29,737.34
Loans receivable	$124,744.00	
Less reserve	124,744.00	
Loans receivable, net		
Note receivable—Trustees of the California Medical Association		270,000.00
Furniture and fixtures (at nominal value)		1.00
Prepaid insurance		2,017.50
Other prepaid expense and deferred charges		4,995.66
Deposits		973.10
Total Assets		$469,022.78
LIABILITIES AND DEFERRED INCOME:		
Accounts payable:		
American Medical Education Foundation	$162,505.00	
Other	60,822.06	
Total		$223,327.06
Deferred income		7,562.10
Total Liabilities and Deferred Income		$230,889.16
NET ASSETS		$238,133.62

Statement of Income, Expenditures, and Net Assets for the Years Ended June 30, 1960 and 1959

	YEAR ENDED JUNE 30	
	1960	1959
INCOME:		
Dues and general:		
Membership dues less portion allocated to California Medicine subscription	$840,266.25	$732,057.77
Postgraduate institute	12,445.00	19,111.00
Fee for collection of American Medical Association dues	4,140.25	3,946.51
Interest earned	4,597.80	5,413.26
Other	23.46	20.93
Total	$861,472.76	$760,549.47
Official journal—California Medicine:		
Advertising	$234,007.44	$191,216.39
Nonmember subscriptions	2,300.11	2,193.00
Reprints, net	737.76	646.21
Total	$237,045.31	$194,055.60
Less expenditures (Schedule 1)	235,146.25	216,900.10
Direct (*cost*) gain	$ 1,899.06	*$ 22,844.50*
Allocated portion of members' dues	52,780.50	50,646.00
Total	$ 54,679.56	$ 27,801.50
Total Income	$916,152.32	$788,350.97
EXPENDITURES (Schedule 1):		
Administration	$383,428.22	$279,115.21
Scientific, educational, and public relations	552,778.43	558,564.38
Total Expenditures	$936,206.65	$837,679.59
EXCESS OF EXPENDITURES OVER INCOME—CURRENT YEAR	$ 20,054.33	$ 49,328.62
OTHER CREDITS, NET:		
Reduction in reserves on account of:		
Payment on loans	$ 16,876.00	$ 32,923.50
Loan sold to Trustees		55,000.00
Total	$ 16,876.00	$ 87,923.50
Less expenses applicable to prior years, net	890.95	2,028.06
Other Credits, Net	$ 15,985.05	$ 85,895.44
NET ASSETS:		
Increase (*Decrease*)—Current Year	*$ 4,069.28*	$ 36,566.82
At Beginning of Year	242,202.90	205,636.08
At End of Year	$238,133.62	$242,202.90

Italic figures denote decrease.

CALIFORNIA MEDICAL ASSOCIATION

Schedule 1

Statement of Expenditures for the Years Ended June 30, 1960 and 1959

	YEAR ENDED JUNE 30	
	1960	1959
ADMINISTRATION:		
Salaries:		
Executive	$ 48,726.32	$ 46,024.96
Clerical	51,440.39	38,240.05
Total	$100,166.71	$ 84,265.01
Office expenses:		
Rent	$ 15,942.18	$ 9,991.56
Equipment purchases and maintenance	39,101.07	4,689.28
Supplies	11,968.59	7,991.44
Telephone and telegraph	8,507.71	5,333.67
Postage	3,877.62	2,266.78
Professional fees (other than legal)	3,485.00	1,240.00
Moving	1,981.72	....
Sundry	2,340.13	1,848.12
Los Angeles (other than salaries)	4,085.85	5,546.29
Total	$ 91,289.87	$ 38,907.14
Legal	$ 35,588.32	$ 32,902.29
Meeting expense:		
Annual session	$ 43,421.60	$ 42,693.39
American Medical Association	44,078.21	39,919.46
Student assistance—A.M.A.	1,307.36	3,652.65
Council	8,187.54	8,684.22
Medical executives	9,006.43	8,381.53
County officers	9,551.17	4,208.29
Finance and judicial	1,393.82	....
Total	$116,946.13	$107,539.54
Less annual session exhibitors' and postgraduate fees	35,675.00	39,995.00
Meeting expense, net	$ 81,271.13	$ 67,544.54
Travel expense:		
Council	$ 19,816.24	$ 17,371.60
Officers	13,278.47	7,336.66
Administrative	4,439.69	3,453.84
Total	$ 37,534.40	$ 28,162.10
Other expense:		
The Woman's Auxiliary	$ 6,252.69	$ 7,484.69
Payroll taxes	6,680.59	4,384.89
Personal property taxes	1,104.74	549.49
Dues and subscriptions	3,743.50	3,035.00
Insurance	4,421.27	3,253.03
California Physicians' Service	6,154.18	4,931.09
Placement	7,801.68	2,425.31
Interest and sundry	1,419.14	1,270.63
Total	$ 37,577.79	$ 27,334.13
TOTAL	$383,428.22	$279,115.21
SCIENTIFIC, EDUCATIONAL, AND PUBLIC RELATIONS:		
Medical services	$ 50,494.69	$ 70,234.78
Community health services	17,360.56	
Cancer Commission	34,880.33	33,861.70
Public health and public agencies	13,121.78	13,191.24
Medical education	59,506.85	63,906.69
Professional welfare	23,271.69	40,556.92
Bureau of Research and Planning	18,500.05	....
Public policy and public relations	130,947.37	142,186.43
Special committees	14,134.91	10,772.25
Contributions:		
American Medical Education Foundation	162,505.00	156,561.50
Physicians' Benevolence Fund, Inc.	16,703.50	16,195.25
Medical Libraries	8,351.70	8,097.62
Nursing League	3,000.00	3,000.00
TOTAL	$552,778.43	$558,564.38
OFFICIAL JOURNAL—CALIFORNIA MEDICINE:		
Printing	$165,213.39	$152,090.26
Salaries	30,372.06	26,793.33
Advertising sales expense (including applicable salaries)	15,954.54	14,932.81
Rent	3,400.54	3,638.28
Telephone and telegraph	2,383.02	1,797.08
Postage and mailing	7,594.58	7,081.61
Addressograph	3,056.39	3,023.90
Illustrations	1,627.59	2,618.21
Advertising cash discounts	4,069.64	3,385.20
Sundry	1,474.50	1,539.42
TOTAL	$235,146.25	$216,900.10

PHYSICIANS' BENEVOLENCE FUND, INC.

(A Nonprofit Corporation)

Statement of Net Assets, June 30, 1960

ASSETS:		
Cash—Crocker-Anglo National Bank		$ 28,411.90
Investments:		
U. S. Treasury bonds, 2½% (at maturity values):		
Due December 15, 1969	$10,000.00	
Due December 15, 1972	34,000.00	
Total (market value, $37,200)	$44,000.00	
U. S. Treasury bills, $50,000.00 face value, due November, 1960 (at cost)	49,153.50	
Total investments		93,153.50
Accrued interest receivable		323.39
TOTAL ASSETS		$121,888.79
CONSISTING OF:		
Contributed assets	$92,132.28	
Excess of income over expenditures	29,756.51	
TOTAL		$121,888.79

Statement of Income and Expenditures for the Year Ended June 30, 1960

INCOME:		
Contributions received:		
California Medical Association (see note)	$16,703.50	
"The Woman's Auxiliary" of the California Medical Association	2,765.64	$19,469.14
Contribution returned by beneficiary		300.00
Interest earned:		
On U. S. Treasury securities	$ 2,371.71	
On loan	500.00	2,871.71
TOTAL		$22,640.85
EXPENDITURES:		
Payments to beneficiaries	$15,925.00	
Other	327.26	
TOTAL		16,252.26
EXCESS OF INCOME OVER EXPENDITURES:		
CURRENT YEAR		$ 6,388.59
AT BEGINNING OF YEAR		23,367.92
AT END OF YEAR		$29,756.51

NOTE 1: The constitution of the California Medical Association, Article IV, Section 6, was amended in May, 1956, and provides: "At least $1.00 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund, Inc., a corporation, and shall be used for the purposes as set forth in that corporation's Articles and Bylaws."

NOTE 2: Subsequent to June 30, 1960, the Physicians' Benevolence Fund, Inc., completed a loan to the Los Angeles County Physicians Aid Association in the amount of $50,000.00 as evidenced by a promissory note dated June 22, 1960. This note is payable in quarterly installments of $1,000.00 plus interest at the rate of 2½ per cent per annum, beginning September 1, 1961, and is secured by a deed of trust on Los Angeles County real estate.

(Continued on next page)

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

(A Nonprofit Corporation)

Statement of Net Assets, June 30, 1960

ASSETS:		
Cash		$ 26,018.97
United States Treasury bonds (at maturity value—market value, $971,480)		1,121,000.00
Contract and note receivable		48,000.00
Accrued interest and rent receivable		2,876.46
Investment—Pacific Magnetic Tape Equipment Co. (Note 1)		9,000.00
Property—At cost (subject to mortgage):		
Land	$ 87,400.00	
Buildings and improvements	295,938.03	
Total	$383,338.03	
Less accumulated depreciation	9,409.00	
Net depreciated value		373,929.03
Cash surrender value of life insurance policies held in trust for California Medical Association employees		101,148.99
Prepaid real estate taxes (contra)		8,500.00
Prepaid insurance		1,073.04
TOTAL ASSETS		$1,691,546.49
LIABILITIES:		
Note payable		$ 270,000.00
Mortgage payable		96,524.52
Trust Fund for California Medical Association Employees (Note 2)		137,148.99
Other trust funds		11,727.78
Accrued real estate taxes (contra)		8,500.00
Accounts and accrued interest payable		2,803.51
Deferred rental income		225.00
TOTAL LIABILITIES		$ 526,929.80
NET ASSETS		$1,164,616.69
CONSISTING OF:		
Contributed assets	$882,915.99	
Excess of income over expenditures	281,700.70	
TOTAL		$1,164,616.69

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

Statement of Income and Expenditures for the Year Ended June 30, 1960

INCOME (other than rentals):		
Interest on United States Treasury bonds		$ 28,025.00
Interest on contract and note		2,504.14
Dividends		900.00
Increase in cash value of life insurance policy surrendered		289.50
TOTAL		$ 31,718.64
EXPENDITURES (other than property expenses):		
Interest on ordinary loans	$ 446.46	
Fees	1,410.37	
Insurance	201.77	
Other	137.01	
TOTAL		2,195.61
REMAINDER		$ 29,523.03
DEDUCT:		
Net premiums on life and retirement insurance policies	$20,279.10	
Provision for the retirement or other benefit of an employee of an affiliated organization	3,000.00	
Total	$23,279.10	
Excess of expenses over income, property (Schedule 1)	11,151.09	34,430.19
EXCESS OF EXPENDITURES OVER INCOME, CURRENT YEAR		$ 4,907.16
EXCESS OF INCOME OVER EXPENDITURES:		
AT BEGINNING OF YEAR		$286,607.86
DEDUCT EXCESS OF EXPENDITURES OVER INCOME—CURRENT YEAR		4,907.16
AT END OF YEAR		$281,700.70

(Continued on next page)

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

Schedule 1

Statement of Property Income and Expenses for the Year Ended June 30, 1960

INCOME FROM RENTALS:		
California Medical Association	$24,256.00	
Others	11,402.36	
TOTAL		$35,658.36
EXPENSES:		
Utilities	$ 3,421.63	
Janitor service	4,275.90	
Repairs—Plumbing, venetian blinds, etc.	1,223.08	
Insurance	385.76	
Elevator inspection and service	493.60	
Supplies and other expense	716.07	
Total	$10,516.04	
Taxes (including penalty of $248.31)	8,525.19	
Interest on mortgage	4,231.22	
Interest on $270,000 note for purchase of property and making improvements thereon	14,128.00	
Total before depreciation	$37,400.45	
Depreciation	9,409.00	
TOTAL		46,809.45
EXCESS OF EXPENSES OVER INCOME		$11,151.09

NOTES TO FINANCIAL STATEMENTS, JUNE 30, 1960

NOTE 1: The Trustees own all of the outstanding stock of the Pacific Magnetic Tape Equipment Co., which was formed for the purpose of merchandising magnetic tape equipment as an adjunct to the activities of the Audio-Digest Foundation, a wholly-owned subsidiary of the California Medical Association. An unaudited financial statement of the Pacific Magnetic Tape Equipment Co. as of June 30, 1960, reflects the net worth to be $18,919.12 at that date.

NOTE 2: The portion of the Trust Fund for California Medical Association Employees applicable to the retirement or similar benefit to Mr. and Mrs. Ben H. Read, amounting to $36,000 at June 30, 1960, has not been segregated from other assets of the corporation as directed by Chapter XVII of the Bylaws of the Corporation, which states: ". . . . All assets of this fund shall be held separate and apart from all other assets and property of the Corporation. . . ."

MEDICAL EXECUTIVES CONFERENCE

To the President and the House of Delegates:

The Medical Executives Conference met before each of the Council meetings to discuss county society problems and to act in an advisory capacity to the C.M.A. staff. With one exception the meetings were 100 per cent attended.

The subjects discussed included society sponsored group Insurance Plans, Legislative problems, general Public Relations, Physicians Placement Service, the C.M.A. TV Series and County Society's Public Service Committee operations.

Several ad hoc committees were appointed for special projects and performed their tasks with dispatch.

A number of new members of the conference were welcomed to the group.

The conference serves as a definite part of the C.M.A.'s activities.

Respectfully submitted,

ROBERT L. WOOD, JR., *Chairman*
Medical Executives Conference

LIAISON COMMITTEE TO THE CALIFORNIA HOSPITAL ASSOCIATION

To the President and the House of Delegates:

At the 1960 meeting of the House of Delegates, the Guiding Principles for Physician-Hospital Relationships were approved. During the past year, the Liaison Committee has been most active in meeting with county medical societies to explain the Guiding Principles and to urge their adoption and implementation by the medical staffs of hospitals. A copy of the Guiding Principles has been sent to each member of our association and has been reported on most favorably in several national publications. Approximately 30,000 copies of the Guiding Principles have been distributed.

Several counties have organized survey committees recommended by the Guiding Principles. The C.M.A. Council has authorized the Liaison Committee to appoint a state panel of consulting hospital surveyors. The committee is also in the process of drafting guides for the use of survey teams.

It is expected that in the coming year, the work of this committee will be greatly increased. It is hoped that all medical staffs of hospitals will adopt and implement the Guiding Principles.

I want to gratefully acknowledge the unselfish work and time given to this committee by Doctors Wadsworth and Halter, the other committee members; and Mr. William Whelan and Doctor Walter Batchelder of the C.M.A. staff who have worked long and hard on behalf of this committee.

Respectfully submitted,

JAMES C. MACLAGGAN, *Chairman*
Liaison Committee to the California Hospital Association

LIAISON COMMITTEE TO THE STATE BAR OF CALIFORNIA

To the President and the House of Delegates:

During the past year, the C.M.A. Liaison Committee to the State Bar of California met with the members of the Liaison Committee of the State Bar to confer with the California Medical Association. These committees have completed a survey conducted among those physicians and attorneys who have used the medical expert panels for malpractice cases. A report of this survey has been made to the Bar Association and printed in their *Journal;* the report to our Association was reported in the November 1960 issue of CALIFORNIA MEDICINE.

Based on the survey, the members of both liaison committees have concluded that a breakthrough has been achieved in securing voluntary physician testimony in meritorious cases. They have recommended that continued existence of the present program will not only result in an improvement in this segment of the administration of justice but will go far in improving the relationship between the two professions and with the public.

Resolution No. 23, passed by the 1960 House of Delegates, recommended that the Association initiate legislation to grant immunity from legal action for those actions of physicians' committees which are undertaken in the public interest. The C.M.A. Council referred this resolution to the liaison committees for study. The two committees recommended to their respective associations that the basic idea is in the public interest and should be supported in principle. It was further recommended that the chief counsel and the Commission on Public Policy take steps to have drafted an appropriate legislative proposal to carry out the intent of Resolution No. 23.

Resolution No. 67, passed by the 1960 House of Delegates, proposed that legislation be introduced to provide that plaintiffs' attorneys be required to post a $2,500 bond before filing a professional liability suit in the State of California. This resolution was referred to the liaison committees for study. Representatives of the State Bar pointed out that there is a general feeling among the members of the bar and judiciary that something constructive ought to be done to discourage malicious and frivolous prosecution in all fields. They also reported that the general subject is receiving a great deal of study by several committees of the State Bar incident to the proposal for the establishment of a personal injury commission.

In view of this fact the liaison committees recommended to the Council that the specific proposal made by Resolution No. 67 is too narrow and should not be pushed. It was further recommended that the present studies being undertaken by the State Bar of California should be followed with interest by the California Medical Association.

The work of these committees during the past year has been most interesting and worthwhile to both the Medical Association and Bar Association and their activities should be continued.

I am most grateful to the members of the C.M.A. Liaison Committee, Doctors J. Norman O'Neill, Rees B. Rees, Donald A. Charnock and Carl Goetsch, who have worked with such a fine spirit of cooperation.

Respectfully submitted,

FRANCIS E. WEST, *Chairman*
Liaison Committee to the State Bar of California

LIAISON COMMITTEE TO C.P.S.

To the President and the House of Delegates:

The Liaison Committee was created last year by action of the House of Delegates, the purpose of which was to establish a better rapport between the Association and C.P.S. and to review the various contracts being implemented by C.P.S. The Liaison Committee interprets the House of Delegates resolution as a charge to assist C.P.S. in leading the way in furnishing the most advanced medical coverage available to the public.

The past philosophy of C.P.S. is well known to all—that of providing prepaid medical care to low income groups through a service contract. From its inception, C.P.S. has made available prepaid medical care insurance on an indemnity basis to over-income ceiling groups.

The present philosophy of the operation of C.P.S. entails four essential features:

1. To provide for a mechanism for the prepayment of medical care costs.
2. To further the cause of prepayment in a manner that is advantageous to the subscribing member, the physician member and to California medicine.
3. To assist county medical societies in experimental programs.
4. To act as a fiscal agent for the physicians in California with respect to state and federal governmental programs.

In determining the philosophy for future operations of C.P.S., it is necessary to combine principles and philosophies. C.P.S. should continue to grow in proportion to anticipated increase in the state's population. As long as the competitive situations within the prepaid medical care field continue, there seems no reason to assume that any single insurance company or service organization, offering to the public prepaid medical care insurance, will grow unduly or assume a monopolistic position. The competitive market will be the factor which decides the ultimate size of C.P.S.

The committee is of the opinion that C.P.S. should be prepared to advance and grow in the field of prepaid medical care. It should, also, be prepared to continue to cooperate in greater degree with federal and state agencies.

The Liaison Committee has made numerous recommendations to the Commission on Medical Services and to the Council. Fundamentally, the recommendations have been geared to allowing C.P.S. to keep pace with current economic trends and developments so that it can meet consumer demands on a more realistic basis.

In the past, C.P.S. has been guided by a resolution which limited its sales efforts with respect to programs sold under the $6,000 family income ceiling on a county option basis. Technically, C.P.S. is not bound by the county option provision on contracts and the committee has reaffirmed the right of C.P.S. to act in the best interests of participating physicians and subscribers as determined by the Board of Trustees.

Additional recommendations have been made by C.P.S. in raising the level of fees paid by it to a more realistic level.

In the future, the Liaison Committee will be the body to conduct any polls of the members of the Association or participating physicians of C.P.S. regarding questions relating to C.P.S. The committee has reviewed and made recommendations on all House of Delegates resolutions referred to it. The committee has, also, worked closely with C.P.S. in contract demands as spelled out by the House of Delegates resolution.

The Council has approved the committee's reports and the actions of the Council, or of C.P.S., on these reports will be presented in other reports.

Respectfully submitted,

DONALD D. LUM, *Chairman*
Liaison Committee to C.P.S.

announcing Ioquin®
SUSPENSION

A new preparation for the treatment of dandruff — afforded 95% control of symptoms in 714 cases studied.

From Abbott Laboratories—makers of SELSUN®*—comes an outstanding new treatment for common dandruff.*

WHAT IS IOQUIN?

Ioquin is a non-toxic suspension of 10% w/v diiodohydroxyquin (U.S.P.) in an aqueous base pleasantly scented with lavender.

HOW EFFECTIVE IS IOQUIN?

In clinical trials, Ioquin produced satisfactory control in more than 95% of 714 patients studied. The patients were about evenly divided between men and women.

HOW SAFE IS IOQUIN?

In the trials previously mentioned, no cases of sensitivity were reported. The investigators found Ioquin to be extremely well tolerated . . . even by patients treated regularly over a period of several months.

WHAT ARE THE INDICATIONS?

Ioquin is indicated for the treatment of mild or severe seborrheic dermatitis . . . *and is equally effective for dry or oily scalps.*

HOW DO YOU USE IOQUIN?

Treatment with Ioquin is a simple wash and rinse procedure. Most cases of simple dandruff can be brought under control in two to three weeks and kept under control with weekly applications (some cases are controlled with even less frequent applications).

HOW IS IOQUIN SUPPLIED?

Ioquin is supplied in 120 ml. green plastic squeeze bottles. List No. 6907.

IN SUMMARY . . .

Ioquin is an effective new preparation for the treatment of common dandruff. It has been shown to be safe and effective in clinical trials. It is a professional product in every sense of the word. It will be detailed to physicians and sold through pharmacies only. For complete details, see your Abbott man, or drop us a line . . . we'll be happy to send you the literature.

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IOQUIN—Diiodohydroxyquin, Abbott; SELSUN—Selenium Sulfide, Abbott 008-271

Surgical Deaths Reduced Among Hemophiliacs

Deaths due to surgery among persons suffering hemophilia have been "dramatically reduced," three Ohio surgeons reported recently.

"At present, mortality in intra-abdominal surgery in the classical hemophiliac patient does not appear to be greater than in the nonhemophiliac population," Drs. Edward P. Passaro Jr., Prentiss M. Dettman, and Blanca Smith, Columbus, said in the *Archives of Surgery*, published by the American Medical Association.

Hemophilia is a hereditary blood condition in which the blood clots slowly or not at all, threatening the victim with death from excessive bleeding.

"Reports of operative mortality ranging from 30 per cent to 60 per cent have long been a deterrent to surgery in the hemophiliac," the authors commented.

However, they said, in recent years an effective approach has been developed to the management of hemophiliacs who are undergoing major surgery and such operations are being reported with increasing frequency.

The 16 reported and proven cases of classical hemophiliacs who have undergone surgery within the abdomen were reviewed. They included 15 men and 1 woman ranging in age from 4 weeks to 57 years, all of whom recovered.

"Surgical mortality in these patients is not significantly different from that in nonhemophiliacs," the authors concluded.

However, they said, major surgery in the hemophiliac carries with it a higher rate of postoperative illness.

Appendicitis has been the most frequent indication for major surgery, they said, while tonsillectomy and teeth extractions are the most common minor procedures.

The authors reported an operation on a 12-year-old hemophiliac whose intestine had developed a fold (intussusception) causing an obstruction. The patient was discharged 11 days after the operation but had to be readmitted two days later for blood transfusions during a four-day period. Following the second hospitalization, however, there were no further complications.

The authors said this ailment had not been reported previously in a hemophiliac.

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Six days aboard New 60' Sailing Ketch all through the 172 Evergreen San Juan Islands. Mankind has ever yearned for an island paradise—a locale where isolation, a mild climatic environment and scenic beauty contribute to repose and freedom from strain of contemporary life. The San Juans satisfy this desire.

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For topical treatment of DENUDED and PAINFUL SKIN LESIONS

Anti-Pyrexol antiseptic ointment reduces pain, minimizes scarring, aids healing of burns, sunburn, scalds, lesions, wounds, and local inflammation of skin and mucous membrane. Sold through surgical supply houses. 1, 5, 10 and 50 lb. tins. Time tested—professionally since 1921. Active ingredients: Oils of spearmint, bay, wintergreen (syn.), salicylic acid, lanolin, zinc oxide, phenol .44%, ortho-hydroxyphenyl-mercuric chloride .056%, petrolatum, paraffin.

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EASY SPREADING
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on the pathogenesis of pyelonephritis:

"An inflammatory reaction here [renal papillae] may produce sudden rapid impairment of renal function. One duct of Bellini probably drains more than 5000 nephrons. It is easy to see why a small abscess or edema in this area may occlude a portion of the papilla or the collecting ducts and may produce a functional impairment far in excess of that encountered in much larger lesions in the cortex."[1]

The "exquisite sensitivity"[2] of the medulla to infection (as compared with the cortex), highlights the importance of obstruction to the urine flow in the pathogenesis of pyelonephritis. "There is good cause to support the belief that many, perhaps most, cases of human pyelonephritis are the result of infection which reaches the kidney from the lower urinary tract."[3]

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Average Furadantin Adult Dosage: 100 mg. tablet q.i.d. with meals and with food or milk on retiring. *Supplied:* Tablets, 50 and 100 mg.; Oral Suspension, 25 mg. per 5 cc. tsp.

References: 1. Schreiner, G. E.: A.M.A. Arch. Int. M. **102**:32, 1958. 2. Freedman, L. R., and Beeson, P. B.: Yale J. Biol. & Med. **30**:406, 1958. 3. Rocha, H., et al.: Yale J. Biol. & Med. **30**:341, 1958.

NITROFURANS—a *unique* class of antimicrobials

EATON LABORATORIES, DIVISION OF THE NORWICH PHARMACAL COMPANY, NORWICH, N. Y.

NEW DRUG

(Continued from Page 48)

a history of peptic ulcer is elicited, Tandearil tablets should be administered with utmost caution and only in treating conditions of sufficient severity to warrant such usage. All patients, regardless of their history, should be warned to report immediately the occurrence of black or tarry stools.

Blood elements: Tandearil sometimes produces a moderate lowering of the red cell count which is attributable to hemodilution rather than to any direct effect on the erythrocytes or homopoiesis.

Authenticated cases of agranulocytosis associated with the drug have occurred. It is, therefore, imperative to guard against this possibility by conducting routine periodic blood counts. Any significant fall in the total white count or relative decrease in granulocytes should be regarded as a signal for immediate cessation of therapy and institution of appropriate countermeasures. Thrombocytopenic purpura must also be considered a possible side effect of Tandearil therapy.

Allergic response: Drug rash occasionally occurs as a complication of Tandearil therapy, but not infrequently it subsides when dosage is reduced. The appearance of a mild rash, therefore, need not necessarily be regarded as a signal for permanent discontinuance of treatment. When the rash is accompanied by fever, a more serious degree of allergic response is indicated, and the drug must usually be withheld. Purpuric rash has been reported.

Rarely, a generalized type of allergic response occurs which is similar to the serum sickness syndrome. This type of reaction indicates a marked individual sensitivity to the drug and medication must be permanently withdrawn.

Miscellaneous: Stomatitis occasionally requires the interruption of treatment with Tandearil. Adoption of a lower dosage schedule and the institution of strict oral hygiene sometimes prevents recurrence of lesions.

The infrequent occurrence of such subjective sensations as vertigo and languor during Tandearil therapy is seldom a serious or significant complication. Hepatitis has been reported and should be considered as a possibility.

PHARMACOLOGY

In animals, Tandearil has demonstrated the ability to inhibit or suppress experimentally-produced inflammatory lesions.[1] This action apparently does not involve pituitary-adrenal function and does not impair immunity responses. The compound also shows some analgesic and anti-pyretic activity.[9] In human beings, these properties have been demonstrated clinically in a wide variety of indications in which inflammation plays a role.[25] Tandearil produces sodium retention but does not affect potassium excretion and has limited uricosuric activity.

Absorption: Following oral administration, Tandearil is absorbed from the gastrointestinal tract and accumulates in the plasma in considerable quantities. A comparison of plasma levels in human subjects 4 to 24 hours following oral and intravenous administration of a single 600 mg. dose of Tandearil showed plasma levels almost equal, regardless of the route of administration, indicating rapid and complete absorption.[4]

On repeated dosage, plasma levels of Tandearil increase progressively for the first three days but taper off thereafter, and remain constant from day to day for the same individual.[4] This plateau plasma value varies from 8.0 to 16.2 mg. per cent. At these levels, approximately 98 per cent of the drug is bound to plasma proteins.[4] Due to the plateau effect, there is no therapeutic advantage to be gained by increasing dosage beyond accepted levels. On the contrary, only increased toxicity may result from elevated dosage schedules. Tandearil undergoes a surprisingly slow rate of biotransformation in the human body in spite of its phenolic structure. Tandearil is extraordinarily resistant to metabolic influences, as shown by its biologic half-life of approximately 72 hours.[5]

Anti-inflammatory and analgesic effects: The anti-inflammatory properties of Tandearil differ from those of enzymes and steroids. It has been suggested that the usual anti-inflammatory activity of Tandearil must be attributed to a peripheral component of the drug which is active in the inflamed area and which possibly is found in higher concentration in affected tissues.[9]

Analgesia is a concurrent effect often noted in anti-inflammatory therapy with Tandearil. It has been postulated that this relief of pain ". . . may be due to an action on the central nervous system or a reduction of edema at the site of inflammation."[21]

That Tandearil is a potent force in reduction of the inflammatory process has been shown experimentally. Administered to rats previous to induced inflammation using the granuloma pouch technique of Selye, Tandearil inhibited exudate formation by 78 per cent and granuloma formation by 49 per cent. In contrast, corresponding values for acetylsalicylic acid were only 10 and 9 per cent respectively.[9]

Further investigations of anti-inflammatory activity of Tandearil were conducted on experimental animals using the formalin edema technique.[9] Edema was inhibited up to 70 per cent in animals to whom Tandearil had been administered 60 minutes prior to formalin injection.[9] Tandearil also demonstrated significant inhibition of serotonin edema and did so in much smaller doses than other pyrazole derivatives.[9]

(Continued on Page 68)

CHELATION — (GR-CHELE: CLAW OR TO HOLD.)

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ADVANTAGES—

Chelated Iron PLUS 4 Chelated Minerals • High Therapeutic Effectiveness • Less Irritation—even on empty stomach • No Tooth Stain • Pleasant Flavor • Economical

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LIQUID HEMATINIC
CHELATED IRON-MINERALS
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FORMULA —

Each 5 cc. (one teaspoonful) contains:

Iron (as Ferrous Betaine Citrate)	30 mg.
Cobalt (as Cabaltaus Betaine Citrate)	0.1 mg.
Manganese (as Manganese Betaine Citrate)	1.0 mg.
Zinc (as Zinc Betaine Citrate)	1.25 mg.
Magnesium (as Magnesium Betaine Citrate)	6.0 mg.
Vitamin B-1	1.5 mg.
Vitamin B-2	1.2 mg.
Vitamin B-12	6.0 mcg.
Niacinamide	10 mg.
Panthenol	10 mg.

In an exceptionally pleasant tasting base.

Comprehensive literature and samples on request.

S. J. TUTAG & CO.
DETROIT 34,
MICHIGAN

You see an improvement within a few days
Thanks to your prompt treatment and the smooth action of Deprol, her depression is relieved and her anxiety and tension calmed — *often in a few days.* She eats well, sleeps well and soon returns to her normal activities.

Lifts depression...as it calms anxiety!

Smooth, balanced action lifts depression as it calms anxiety...rapidly and safely

Balances the mood — no "seesaw" effect of amphetamine-barbiturates and energizers. While amphetamines and energizers may stimulate the patient — *they often aggravate anxiety and tension.*

And although amphetamine-barbiturate combinations may counteract excessive stimulation — *they often deepen depression.*

In contrast to such "seesaw" effects, Deprol's smooth, *balanced* action lifts depression as it calms anxiety — both at the same time.

Acts swiftly — the patient often feels better, sleeps better, within a few days. Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly —often within a few days. Thus, the expense to the patient of long-term drug therapy can be avoided.

Acts safely — no danger of liver damage. Deprol does not produce liver damage, hypotension, psychotic reactions or changes in sexual function—frequently reported with other antidepressant drugs.

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate. **Supplied:** Bottles of 50 light-pink, scored tablets. Write for literature and samples.

▲Deprol▲®

WALLACE LABORATORIES / *Cranbury, N. J.*

CD-2125

NEW DRUG

(Continued from Page 66)

Uricosuric activity: The uricosuric activity of Tandearil appears to be limited. The oral administration of 800 mg. doses of the drug produces a 30 per cent increase in daily excreted uric acid over control values.[6]

Electrolyte balance: Unlike the corticosteroids, Tandearil does not affect the excretion of potassium. Regarding the balance of other electrolytes, some sodium and chloride retention as well as water may be expected following administration of Tandearil. Excretion of sodium falls off approximately 60 per cent from control values by the third day of medication, but there is a return to initial values during the remaining period of therapy. Once Tandearil is discontinued, diuresis occurs together with loss of sodium that has been retained.

IMPORTANT NOTE

Tandearil is a potent, nonsteroid, anti-inflammatory agent which should never be administered casually. Each patient should be carefully evaluated before treatment is started and should remain constantly under the close supervision of the physician. The following precautions should be observed:

1. Therapy should not be commenced until detailed history and complete physical and laboratory examination of the patient have been made.
2. Patients should be carefully selected, avoiding those in whom it is contraindicated as well as those who will respond to ordinary therapeutic measures, or those who cannot be observed at frequent intervals.
3. Patients using Tandearil should be warned not to exceed the recommended dosage since this may lead to toxic effects and they should discontinue the drug and report to the physician immediately any sign of:
   (a) Fever, sore throat, lesions of the mouth. (Symptoms of agranulocytosis.)
   (b) Black or tarry stools or other evidence of intestinal hemorrhage.
   (c) Skin reactions.
   (d) Marked increase in weight.
4. It is recommended that periodic visits with the patient include:
   (a) Verbal and physical examination of the patient for indications of toxic reactions.
   (b) Checking patient's weight to detect significant water retention.
   (c) Complete blood counts at weekly intervals during the early phase of therapy and at intervals of two weeks thereafter in an effort to detect the possible development of agranulocytosis.
5. Read thoroughly detailed information under Contraindications and Dosage.

CONTRAINDICATIONS

Tandearil is contraindicated in the following circumstances:

(a) Presence of systemic edema, and in cases in which there is danger of cardiac decompensation.
(b) History or symptoms of peptic ulcer (except in those indicated cases so severe or disabling that cautious usage is justified).
(c) Presence of renal, hepatic, or cardiac damage.
(d) History of drug allergy.
(e) History of blood dyscrasia.
(f) Patient receiving other potent chemotherapeutic agents which may increase possibility of toxic reactions.

AVAILABILITY

Tandearil®, brand of oxyphenbutazone, is available as round, tan, sugar-coated tablets of 100 mg. in bottles of 100 and 1000.

BIBLIOGRAPHY

1. Wilhelmi, G.: Arzneimittel-Forsch. 10:129, 1960. 2. Burns, J. J., et al.: J. Pharmacol. & Exper. Therap. 113:481, 1955. 3. Pfister, R., and Häfliger, F.: Helvet. chim. acta 40:395, 1957. 4. Yü, T. F., et al.: J. Pharmacol. & Exper. Therap. 123:63, 1958. 5. Burns, J. J., et al.: Ann. N. Y. Acad. Sc. 86:253, 1960. 6. Burns, J. J., et al.: Nature 182:1162, 1958. 7. Brodie, B. B., et al.: Paper presented at third European Congress of Rheumatology 1955, in Contemp. Rheumatology, 1956, p. 600. 8. Report to Geigy Corporation: Washington Institute for Experimental Medicine, Inc., Herndon, Virginia, Sept. 1956. 9. Domenjoz, R.: Ann. N. Y. Acad. Sc. 82:263, 1960. 10. Wilhelmi, G.: Pubbl. stazione zool. Napoli 30:168, 1957. 11. O'Reilly, T. J.: J. Irish M. A. 43:217, 1958. 12. O'Reilly, T. J.: J. Irish M. A. 46:106, 1960. 13. Graham, W.: Canad. M.A.J. 82:1005, 1960. 14. Vaughn, P. P., Howell, D. S., and Kiem, I. M.: Arth. & Rheumat. 2:212, 1959. 15. Hart, F. D., and Burley, D.: Brit. M. J. 1:1087, 1959. 16. Cardoe, N.: Ann. Rheumat. Dis. 18:244, 1959. 17. Smyth, C. J.: Ann, N. Y. Acad. Sc. 86:292, 1960. 18. Vaughn, P., and Howell, D. S.: Paper presented at meeting of National Institute of Health, December 6, 1957. 19. Barczyk, W., and Röth, G.: Praxis 49:589, 1960. 20. Connell, J. F., Jr., and Rousselot, L. M.: Am. J. Surg. 98:31, 1959. 21. Miller, J. M., et al.: Antibiotic Med. & Clin. Therap. 7:109, 1960. 22. Stein, I. D.: Ann. N. Y. Acad. Sc. 86:307, 1960. 23. Radman, H. M., Campbell, C., and Coplan, R. S.: Am. J. Obst. & Gynec. In press. 24. Connell, J. F., Jr., and Rousselot, L. M.: Am. J. Surg. 97:429, 1959. 25. Summary of Clinical Reports to Geigy. 26. Mason, R. M., and Cramer, F.: Brit. M. J. 1:1351, 1959. 27. Burley, D. M.: Lancet 1:774, 1958. 28. Pauline-Netto, A., and Dreiling, D. A.: Am. J. Digest. Dis. In press. 29. Kersley, G. D.: Practitioner 184:58, 1960. 30. Pent, D., and Rojas, J.: Obst. & Gynec. 16:206, 1960.

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Trend to Community Seen in Treating Mentally Ill

The next 10 years will see a "drastic departure" from the traditional large hospital for treating the mentally ill and a trend toward more community services.

This was predicted by Dr. Mathew Ross, Washington, D. C., medical director of the American Psychiatric Association, in the November *Archives of General Psychiatry*, published by the American Medical Association.

Dr. Ross said psychiatrists have begun to doubt the potential of the large public hospital as a treatment center.

There has been increased concern expressed about the size of such hospitals, he said. Whereas in the past the 1,500-bed hospital was considered optimal, he said, that figure has now been pared down to 500 and many think 200 would be preferable.

"If we are to build any new hospitals, it is ventured, they should be small regional hospitals located in areas where the patient lives," he said.

Although the mental hospital will continue to play an important role for many years, he said, a new approach to mental illness in the community will blossom in the next decade.

The new approach focuses on alternatives to the large mental hospital or modifications of it and entails a dispersion of psychiatry into the community, he said.

"Our pleas now are for open hospitals, day hospitals, night hospitals, half-way houses, sheltered workshops, after-care programs, outpatient departments, clinics, and community mental health centers," Dr. Ross said.

We believe that no community general hospital of any size should be considered truly "general" unless it cares for psychiatric as well as other patients, he said. We also maintain that a public mental hospital cannot do its job unless it is integrated into a network of community facilities, he said.

Our philosophy of treatment also is changing, Dr. Ross continued. Although some patients still remain beyond the reach of known therapies, he said, "our sights have been raised."

A decade ago, psychiatrists were reluctant to suggest that perhaps 60 per cent of patients would recover in a mental hospital providing they could be given active treatment, he said. But now it is not at all uncommon to hear it said that 80 to 90 per cent of such patients can be helped providing community support is established.

"Even within our hospitals there is a fresh air of optimism about making more useful citizens of the chronic patients, either within the hospital or in a protected setting outside," he said. "We are, or so it seems to me, moving rapidly towards a philosophy of total treatment for all rather than intensive treatment for some—a limited few, all too often."

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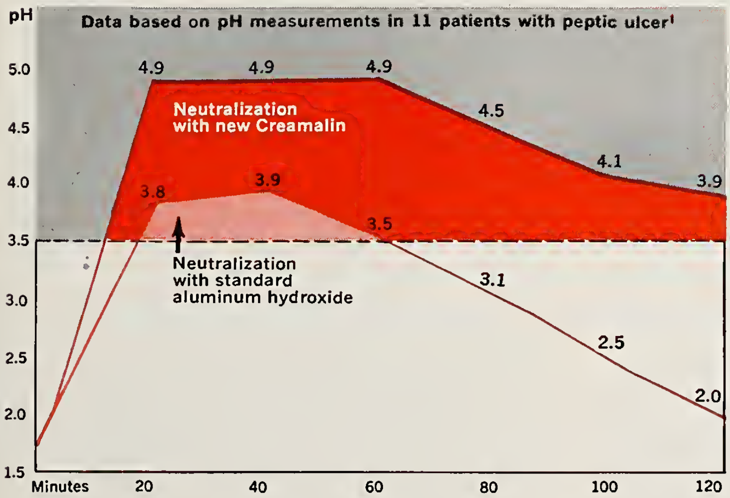

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1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

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Evidence Reported Linking Birth Order, Mental Ills

Evidence indicating a relationship between mental disease and order of birth was reported today in the *Archives of General Psychiatry*, published by the American Medical Association.

A study, based on a random group of women mental patients (schizophrenics) at Springfield State Hospital in Maryland, divided each patient and her brothers and sisters into the older half and the younger half to determine if more patients fell into the first half of their sibling group or the last half.

There were 49 in the first half and 71 in the last half.

The evidence "supports the hypothesis that a significantly greater number of patients was born in the last half of their sibling group," according to Carmi Schooler, Ph.D., Laboratory of Socio-environmental Studies, National Institute of Mental Health, Bethesda, Md.

"The question of relationship between birth order and schizophrenia has been revived by recently published experimental findings with normals," she commented. "These studies suggest a relationship between birth order and a primary symptom of schizophrenia, social self-isolation."

These earlier findings indicated that first-borns or only children tend to be more affiliative in an anxiety-provoking experimental situation than those who have older siblings, she said. Later-born subjects when anxious did not particularly wish to be with other people, she said.

Dr. Schooler reviewed other studies on birth order and schizophrenia, pointing out that evidence of a relationship is "especially strong when first-born and last-born are compared" although her own study showed no significant difference.

"The evidence for the existence of greater rates of hospitalization among last than first half individuals is not as strong," she continued. "The findings in our sample, however, seem to indicate that a significant difference exists.

"In general, when the data from the various studies are combined, significantly more of the subjects are last-born than first-born. This difference, however, appears to be entirely due to subjects from families of four or more."

If a relationship between birth order and incidence of schizophrenia does in fact exist, she said, the problem of finding its cause remains.

"One hypothesis . . . is that the apparent effect of birth order is merely an artifact of the relationship between increasing mother's age and incidence of schizophrenia," she said.

"There are also many plausible psychological explanations. . . .

"As an example, parents may represent for the young child the only significant social source of anxiety reduction, sibs having no such effect. First-

(Continued on Page 88)

After a history and a physical ruled out organic disease, the physician diagnosed the case as recurring states of anxiety. To relieve these symptoms for this busy, on-the-go housewife, he prescribes Meprospan-400, the *only* meprobamate in *sustained-release* form.

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Both potencies in bottles of 30.

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Evidence Reported Linking Birth Order, Mental Ills

(Continued from Page 86)

born and first-half children, in general, probably have greater access to their parents than last-born and last-half sibs, whose parents have a proportionately greater number of other children for whom to care.

"Thus, compared with last-born and last-half children, first-born and first-half children may have been more successful in their early attempts to alleviate anxiety through social means."

Schizophrenia is a severe mental disorder which involves a loss of contact with reality and a temporary or permanent disorganization or disintegration of personality.

Tolbutamide Offers Hope For MS Victims

Seven patients with multiple sclerosis showed "definite improvement" following treatment with a drug used primarily for diabetics, a Minneapolis physician has said.

Dr. Glen Thomas Sawyer, Division of Neurology, University of Minnesota Medical School, made a preliminary report on the effects of tolbutamide on multiple sclerosis in the Oct. 1 *Journal of the American Medical Association.*

Multiple sclerosis (MS) is one of the most common disorders of the nervous system. There is nothing known that will arrest or cure the disease.

Dr. Sawyer said with six of his seven patients, an inactive substance (placebo) was given alternately with the drug. In addition, most of the patients were alternated between a regular high-carbohydrate and a low-carbohydrate diet. Carbohydrates are sugars, starches, celluloses, and gums.

"Definite improvement in symptoms and signs was seen in all patients under tolbutamide treatment except when a high-carbohydrate diet was suddenly started," he reported.

"Deterioration was always seen when placebo capsules were substituted for the tolbutamide. A low-carbohydrate diet yielded favorable and a high-carbohydrate diet unfavorable results in most patients."

Some researchers have suggested that MS may be primarily a disorder of carbohydrate metabolism, he pointed out.

Tolbutamide, introduced in 1957, is an agent for lowering the blood sugar level. It is widely used in treating mild diabetes mellitus, a disorder of the metabolism resulting in a high level of sugar in the blood. Recently the drug has been useful in treating acne and Parkinson's disease, another disorder of the nervous system.

It was the successful remission of acne and the symptoms of multiple sclerosis in a patient given the drug for acne that prompted Dr. Sawyer to prescribe the drug for six other patients.

One of the patients treated by Dr. Sawyer was a 22-year-old man whose muscular coordination had degenerated to a point where he was just able to transfer between wheelchair and bed. He also suffered dizziness, double vision, and severe numbness of the hands and feet. Following therapy, all symptoms disappeared except for a slight unsteadiness when attempting to walk rapidly.

Dr. Sawyer said a study of tolbutamide therapy among a larger number of MS patients has been started.

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Less TB Said to Be Factor In Increasing Lung Cancer

A decline in deaths due to tuberculosis was suggested recently as a factor in the increasing occurrence of lung cancer.

Writing in the *Journal of the American Medical Association*, Drs. Broda O. Barnes, Denver, and Max Ratzenhofer, Graz, Austria, said more persons were surviving TB early in life only to contract lung cancer in their later years.

They predicted that "a large increase" in lung cancer could be expected as tuberculosis deaths continue to decline.

Their conclusions were based on data from 26,546 autopsies performed during the past 15 years at the University of Graz.

The study showed that "a great reduction in tuberculosis is occurring in Graz, as elsewhere." It also showed that the average age of patients who died from tuberculosis was rising.

"In 1944, the average age of death was 38 years, while in 1957 it was 54 years," the authors said. "In other words, the tubercular patient was approaching the 'cancer age' before death."

A further indication was that TB and lung cancer are not found frequently in the same person at the same time.

It appears, they said, "that there are two diseases competing for the same person: tuberculosis at an early age and bronchogenic carcinoma as he grows older."

"It should be expected that countries with a high incidence of tuberculosis would have a low incidence of bronchogenic carcinoma and vice versa, unless other factors are present," they said.

"Our data indicate that a large increase in bronchogenic cancer can be expected as the death rate from tuberculosis decreases.

"At the turn of the century, the United States had about 200 deaths per 100,000 from tuberculosis. If the same proportion of the population is susceptible to tuberculosis today, and if 20 per cent of this same population is susceptible to bronchogenic carcinoma, then 40 per 100,000 might succumb to lung cancer when tuberculosis is eradicated. This, of course, is conjecture, but it illustrates that a further increase in bronchogenic carcinoma may be expected."

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Aging Affects Cholesterol-Produced Atherosclerosis in Rabbits

Rabbits develop advanced hardening of the arteries if allowed to age for two years after the disease is initially produced by a high cholesterol diet, three Canadian physicians have reported.

The report, appearing in the *Archives of Pathology*, published by the American Medical Association, was written by Drs. P. Constantinides, J. Booth, and G. Carlson, Vancouver, B. C.

There is some evidence that cholesterol is a causative factor in the development of hardening of the arteries (atherosclerosis) in man. A common argument against the cholesterol theory is that while fatty streaks resemble those found in man can be produced experimentally by cholesterol in animals, the fatty streaks in animals do not show any advanced characteristics of hardening of the arteries or complications, such as blood clots, the authors pointed out.

In their experiment 50 rabbits were fed a high cholesterol diet for two months. They found that all rabbits examined after the two months had developed arterial plaques containing deposits of fat, an early sign of the disease.

Other rabbits in the group kept alive on a normal diet for two years after the high cholesterol intake developed an advance type of hardening of the arteries, they reported. During this period the cholesterol content, the area and the thickness of the plaques "greatly increased," the authors said.

In another experiment, it was shown that rabbits put on a high cholesterol diet for two two-month periods within 10 months developed the same advanced characteristics of hardening of the arteries and complications, such as blood clots.

The authors concluded that repeated high cholesterol intake "greatly accelerates" the development of advanced hardening of the arteries.

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All menus provide the proper amount of protein, carbohydrates, fat and the other essential nutrients. The principles of good nutrition are included to help the homemaker plan her own properly balanced, calorie controlled menus. With simple subtractions or additions to the same basic menu, each family member can be served delicious satisfying menus according to his individual needs.

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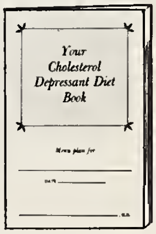
Copies for physicians. "The Cook Book of Glorious Eating for Weight Watchers" is being offered to the general public. If you would like a copy for yourself, together with forms to enable patients to obtain their own copies, please fill in coupon below.

Note: *Please do not confuse this booklet with the Cholesterol Depressant Diet Book, published by Wesson as an aid to physicians and* for professional distribution only. *The concept of the Cholesterol Depressant Diet Book stems from Wesson's value in cholesterol depressant diets. Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen, polyunsaturated Wesson is unsurpassed by any readily available brand.*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ANTISERA, TOXOIDS, VACCINES AND TUBERCULINS IN PROPHYLAXIS AND TREATMENT—Fifth Edition—H. J. Parish, M.D., F.R.C.P.E., D.P.H., Clinical Research Director, Wellcome Foundation Ltd.; formerly Bacteriologist, Wellcome Research Laboratories; and D. A. Cannon, O.B.E., M.B., B.Sc., D.T.M. & H., Medical Adviser, Wellcome Research Laboratories, Beckenham, Kent; formerly Chief Pathologist, Federal Medical Department, Nigeria. The Williams & Wilkins Co., Baltimore 2, Maryland, exclusive U. S. agents, 1961. 288 pages, $8.50.

CLINICAL OBSTETRICS AND GYNECOLOGY—December 1960—Volume 3, Number 4—Fetal Physiology and Distress, edited by Thaddeus L. Montgomery, M.D.; and **Endocrinology**, edited by Robert B. Greenblatt, M.D. A Quarterly Book Series, published by Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1961. $18.00 a year for four consecutive numbers issued quarterly (by subscription only).

CRISIS IN AMERICAN MEDICINE, THE—Edited by Marion K. Sanders. Harper & Brothers, Publishers, 49 East 33rd Street, New York 16, N. Y., 1961. 149 pages, $3.75.

DRUGS IN CURRENT USE—1961—Edited by Walter Modell, M.D., F.A.C.P., Associate Professor, Clinical Pharmacology, Cornell University Medical College. Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1960. 154 pages, $2.25.

NURSES CAN GIVE AND TEACH REHABILITATION—A MANUAL—Mildred J. Allgire, R.N., R.P.T., M.A., Director, Nursing and Therapy Services; and Ruth R. Denney, R.N., R.P.T., B.S., Consultant, Nursing and Physical Therapy; both of the Division of Services for Crippled Children, Indiana State Department of Public Welfare, Indianapolis, Indiana. Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1960. 61 pages, $1.25.

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HAEMATOLOGY AND BLOOD GROUPS—Papers from the British Medical Bulletin—Edited by D. A. G. Galton and K. L. G. Goldsmith. The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Illinois, 1961. 169 pages, $4.00.

HAND, THE—A MANUAL AND ATLAS FOR THE GENERAL SURGEON—Henry C. Marble, M.D., F.A.C.S., Consulting Surgeon to the Massachusetts General Hospital. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1960. 207 pages, $7.00.

LAENNEC—HIS LIFE AND TIMES—Roger Kervran, M.D. Translated from the French by D. C. Abrahams-Curiel. Pergamon Press, Inc., 122 East 55th Street, New York 22, N. Y., 1960. 213 pages, $3.50.

NEW AND NONOFFICIAL DRUGS—An Annual Compilation of Available Information on Drugs, Including Their Therapeutic, Prophylactic and Diagnostic Status—As Evaluated by the Council on Drugs of the American Medical Association—1961. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1961. 849 pages, $4.00.

OCCUPATIONAL DERMATITIS IN CALIFORNIA—State of California, Department of Public Health, 1958, Bureau of Occupational Health, 2151 Berkeley Way, Berkeley 4, California. Complimentary copies are available upon request, within limitations of the supply, from the Bureau of Health Education, California State Department of Public Health, 2151 Berkeley Way, Berkeley 4, California.

PROCEDURES IN VASCULAR SURGERY—Richard Warren, M.D., Clinical Professor of Surgery, Harvard Medical School. Illustrated by Helen C. Lyman. Little, Brown & Company, Boston 6, 1960. 211 pages, $12.00.

PHARMACOLOGY—The Nature, Action and Use of Drugs—Second Edition. Harry Beckman, M.D., Chairman, Departments of Pharmacology, Marquette University Schools of Medicine and Dentistry; Consulting Physician, Milwaukee County General Hospital and Columbia Hospital; Editor, Year Book of Drug Therapy. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1961. 805 pages, $15.50.

PRACTICAL NOTES ON NURSING PROCEDURES—Third Edition—Jessie D. Britten, S.R.N., Sister Tutor Diploma (London). Trained at Royal Free Hospital. Sister Tutor, Worcester Royal Infirmary. Foreword by George H. Marshall, F.R.C.S. (Edin.), Consultant Surgeon to Worcester Royal Infirmary. The Williams & Wilkins Co., Baltimore 2, Maryland, exclusive U. S. Agents, 1960. 199 pages, $4.00.

PROGRESS IN NEUROLOGY AND PSYCHIATRY—AN ANNUAL REVIEW—VOLUME XV — edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 619 pages, $12.75.

PROGRESS IN THE TREATMENT OF FRACTURES AND DISLOCATIONS—1950-1960—Thomas B. Quigley, M.D., Assistant Clinical Professor of Surgery, Harvard Medical School; Surgeon, Peter Bent Brigham Hospital; and Henry Banks, M.D., Clinical Associate in Orthopedic Surgery, Harvard Medical School; Associate in Orthopedic Surgery, Peter Bent Brigham Hospital. W. B. Saunders Company, Philadelphia, 1960. 102 pages, $2.50.

THE QUESTION OF FERTILITY—Georges Valensin, M.D. Translated from the French by Leah Suchodolski. Doubleday & Company, 575 Madison Avenue, New York 22, New York, 1960. 296 pages, $4.50.

RICKETTSIAL DISEASES, THE—P. F. Zdrodovskii and H. M. Golinevich. Translated from the Russian by B. Haigh, M.A., M.B., B.Chir. Late Physician to H.B.M. Embassy, Moscow, U.S.S.R. Pergamon Press, 122 East 55th Street, New York 22, N. Y., 1960. 629 pages, $17.50.

STROKE—A STUDY OF RECOVERY—Douglas Ritchie. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York, 1961. 192 pages, $3.50.

YOUR CHILDREN AND THEIR GANGS—Edith G. Neisser, and Nina Ridenour. U. S. Department of Health, Education, and Welfare, Social Security Administration, Children's Bureau, 1960. Children's Bureau Publication No. 384-1960. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 20 cents. 34 pages.

(Continued on Page 22)

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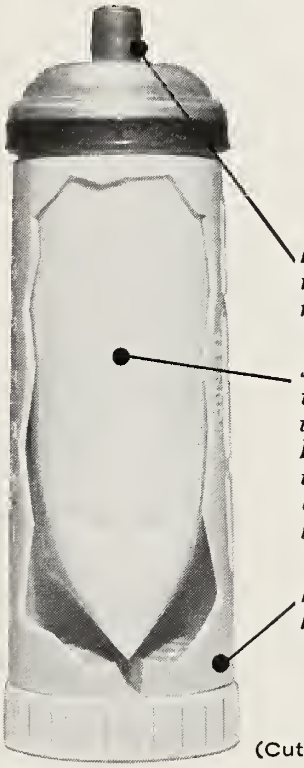

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BOOKS RECEIVED

(Continued from Page 14)

RESPIRATION—Physiologic Principles and Their Clinical Applications. German edition written by P. H. Rossier, A. A. Buhlmann, and K. Wiesinger (Department of Medicine, Zurich University Medical School) and published under the title of **Physiologie und Pathophysiologie der Atmung** (newest second edition) by Springer-Verlag, Berlin-Göttingen-Heidelberg. Edited and translated from the German Edition by Peter C. Luchsinger, M.D., Chief of Pulmonary Physiology Research Laboratory, Mt. Alto Veterans Administration Hospital, Washington, D. C.; Assistant Professor of Medicine, Georgetown University School of Medicine, Washington, D. C.; and Kenneth M. Moser, M.D., Head of Chest and Contagious Disease Branch, U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md.; Instructor in Medicine, Georgetown University School of Medicine, Washington, D. C. C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo., 1960. 505 pages, $15.75.

RESUSCITATION OF THE NEWBORN INFANT—Principles and Practice. Edited by Harold Abramson, M.D., Professor of Clinical Pediatrics, New York Medical College, New York, N. Y.; Director of Maternal and Child Health Program, New York Medical College-Metropolitan Medical Center, New York, N. Y.; Visiting Pediatrician, Metropolitan Hospital, New York, N. Y.; and Chief, Communicable Disease Service, Metropolitan Hospital, New York, N. Y. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Missouri, 1960. 274 pages, $10.00.

SURGICAL DISEASES OF THE PANCREAS—John M. Howard, M.D., F.A.C.S., Professor and Chairman, Department of Surgery, Hahnemann Medical College, and Surgeon in Chief, Hahnemann Hospital; and George L. Jordan, Jr., M.D., M.S., F.A.C.S., Associate Professor of Surgery, Baylor University College of Medicine, Consultant in Surgery, Veterans Administration Hospital. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1960. 607 pages, 199 illustrations, including 2 color plates, $20.00.

THE SURGICAL TREATMENT OF PORTAL HYPERTENSION BLEEDING ESOPHAGEAL VARICES AND ASCITES—M. Judson Mackby, M.D., D.A.B.S., F.I.C.S., Staff Surgeon, Kaiser Foundation Hospital, San Francisco, California; Staff Surgeon, Permanente Medical Group. With a Foreword by Emile Holman, M.D., Professor Emeritus of Surgery, Stanford University Medical School. Illustrations by Laurel Gilliland. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960. 250 pages, $10.50.

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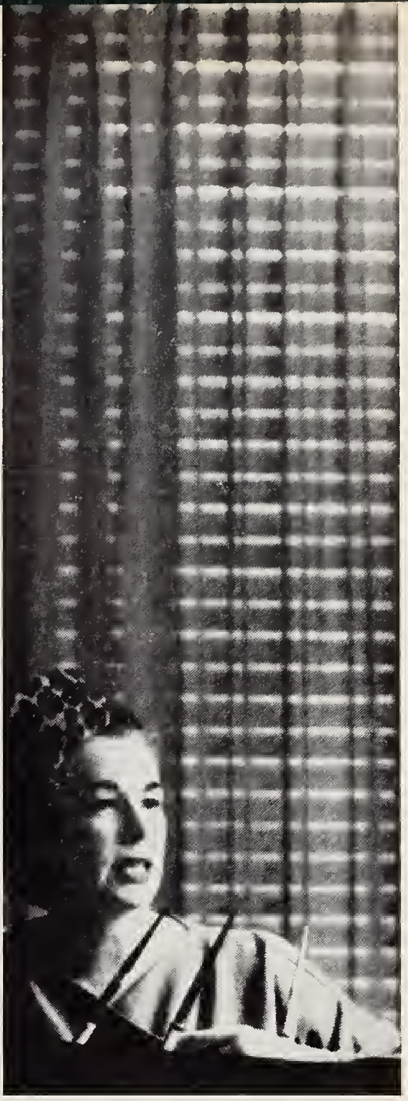

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Attention to Diet Could Prevent Kidney Stones

If as much attention were paid to the diet of adults as it is to children, "tremendous strides" could be made in preventing kidney stones, according to Dr. Hans H. Zinsser, New York City.

"Among the most striking changes in pediatric practice over the past 30 years has been the gradual disappearance in the United States of the problem [of kidney stones] . . . in children," Dr. Zinsser said in the *Journal of the American Medical Association.*

"Increasing attention to the nutritional problems of children is the only common factor to which this progress can be attributed. It seems highly likely. if similar attention is paid to the diet of adults in the United States and to children in the rest of the world, that tremendous strides can be made in the prevention and eradication of the stone problem."

Dr. Zinsser said attention should be directed to relative deficiencies within known nutritional intakes rather than to any single deficiency.

In discussing calcium-containing stones, he said: "The American diet, like that of many other countries, is higher in milk products than is necessary for bone maintenance in adults. Whereas the normal individual may tolerate urinary calcium loads of several grams a day, it is unlikely that the patient shown to have a predilection for forming kidney stones can do the same."

He also pointed out that some commonly used antacid preparations are high in calcium carbonate content.

The origin of a number of calcium stones, he continued, has been traced to the administration of some multiple vitamin preparations creating an excess of vitamin D which has an adverse effect on calcium balance.

Controlling diet, however, cannot eliminate all kidney stones since some are caused by infection, he added.

Dr. Zinsser is associated with the Department of Urology, Columbia University College of Physicians and Surgeons.

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New Acetic Acid Solution Heals 'Swimmer's Ear'

A new acetic acid solution was recommended today for the treatment and prevention of "swimmer's ear," an inflammation of the outer ear caused by bacteria or fungi.

Writing in the *Journal of the American Medical Association*, Dr. Ben H. Jenkins. Newman. Ga.. said the solution combines the time-proved anti-fungal properties of acetic acid and the disinfecting and drying action of alcohol.

He said the solution (VosoL Otic) produced "entirely satisfactory results" in 200 patients. The condition was considered "completely cured" after four to six days in most cases. he said.

Of the 200. 146 had acute new cases not previously treated and 54 had received other medication without satisfactory response, he said.

Dr. Jenkins said the solution had several advantages over antibiotics and other drugs. The use of antibiotics and sulfonamides can be followed by the development of antibiotic and sulfonamide-resistant bacteria. he said, and other drugs may suppress the symptoms without curing the infection.

Also, a number of other patients who previously had swimmer's ear were instructed to use the preparation routinely after swimming as a preventive measure. Dr. Jenkins said not one patient has had to be treated for this condition again.

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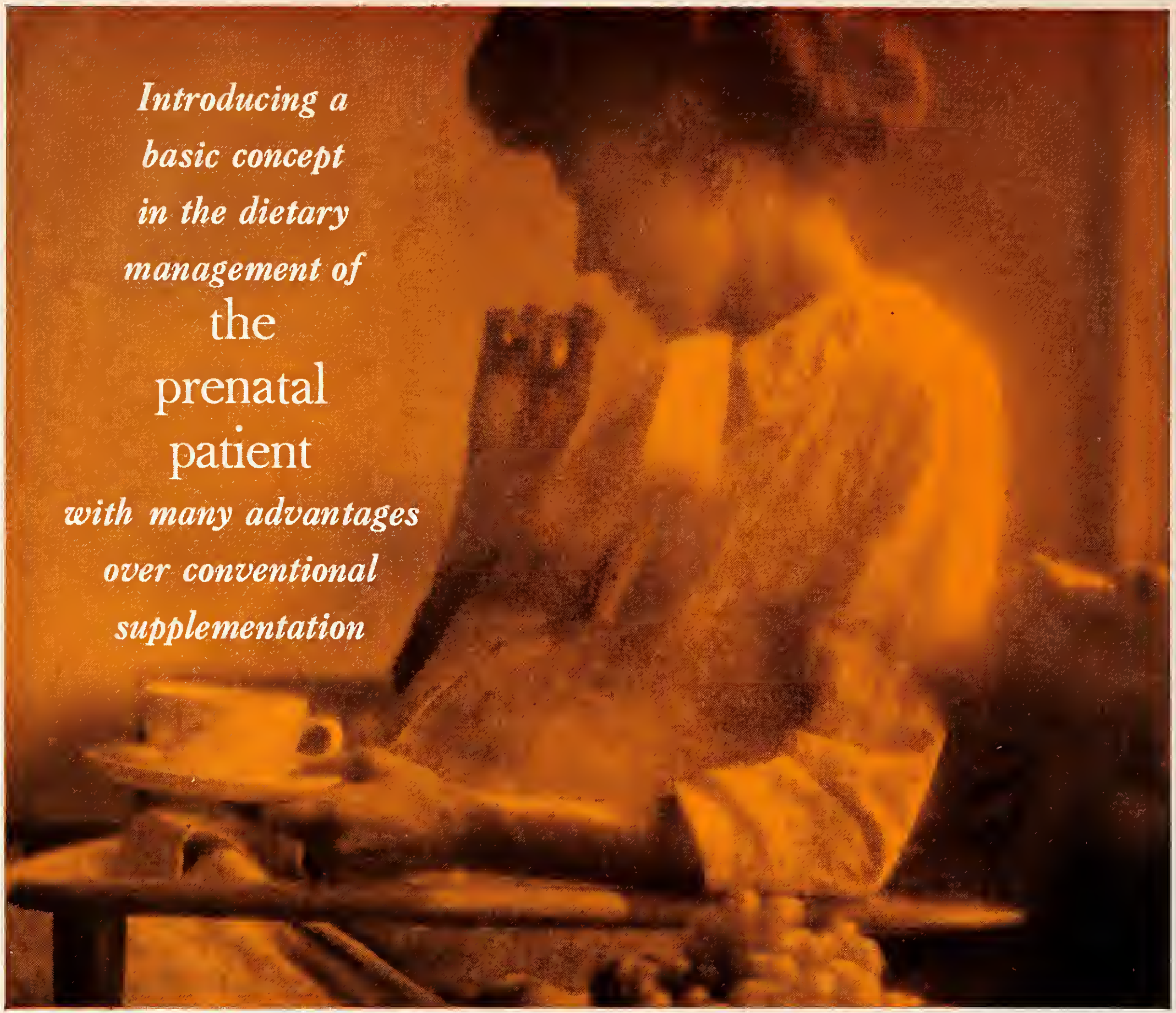

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Multiple Laboratory Evaluation of the Reiter Protein Complement Fixation Method

JAMES N. MILLER, *Ph.D.*, CHARLES M. CARPENTER, *M.D.*,
RUTH A. BOAK, *M.D.*, E. TAYLOR PETERSON, *B.A.*,
CHARLES F. PAIT, *M.D.*, CARL A. LAWRENCE, *Ph.D.*,
GERALD A. HEIDBREDER, *M.D.*, WILLIAM D. LINSCOTT, *B.S.*,
and FRANK P. FAZZAN, *M.S.*, Los Angeles

• Duplicate Reiter protein complement fixation tests were carried out on different days at the UCLA laboratory on 636 specimens entailing diagnostic problems. Results were in agreement in 94.2 per cent of cases.

A comparison of the results obtained with the first RPCF test carried out on 639 diagnostic problem specimens submitted to four Los Angeles laboratories showed disagreement ranging from 10 to 13 per cent.

Agreement between RPCF and TPI results in each of the four laboratories ranged from 81.2 to 82.7 per cent.

A greater correlation was obtained between RPCF and TPI results than between TPI and STS or RPCF and STS.

In the presence of nonreactive RPCF tests, from 5.6 to 7.1 per cent of the specimens tested in each laboratory were reactive to VDRL and TPI tests. Nonreactive VDRL and reactive TPI results ranged from 7.2 to 8.3 per cent of the specimens tested.

In the presence of reactive TPI and RPCF results, 5.5 to 6.4 per cent of the specimens tested in each laboratory showed nonreactive VDRL tests.

Twenty-nine or 4.6 per cent of 625 specimens tested showed nonreactive VDRL, reactive cardiolipin Kolmer and reactive TPI tests.

Of the weakly reactive RPCF, VDRL or cardiolipin Kolmer tests, a higher percentage of the RPCF results gave reactive TPI tests than did either the VDRL or cardiolipin Kolmer procedures.

The number of specimens showing discrepant RPCF results upon being retested in the four laboratories ranged from 33 to 68. Reactive TPI tests on those specimens ranged from 30.3 per cent to 54.4 per cent.

SEARCH FOR A SIMPLE, economic serologic procedure for use in routine public health laboratories to distinguish biologic false positive (BFP) reactions from those due to infection with *Treponema pallidum* has led to the development of the Reiter Protein Complement Fixation (RPCF) test.[3,4] Inasmuch as the *Treponema pallidum* Immobilization (TPI) test, developed by Nelson and Mayer,[8] has been generally accepted as the most dependable test for the diagnosis of syphilis, it was employed as a basis for comparison in the evaluation of the RPCF test.

Preliminary studies have indicated that the RPCF test has sensitivity and specificity comparable with the more expensive and complex TPI procedure,[2,7,10]

From the Department of Infectious Diseases, School of Medicine, University of California, Los Angeles; the Los Angeles City and Los Angeles County Health Departments; and the Laboratory Service, Serology Section, Veterans Administration Center, Los Angeles 24.

Presented, in part, before the Symposium for Recent Advances in the Study of Venereal Diseases, Philadelphia, May, 1958.

Submitted July 15, 1960.

thereby suggesting its usefulness as an adjunct to the battery of serologic tests for syphilis (STS). Inasmuch as these studies were carried out in specialized research laboratories on specimens of blood from persons with well-documented cases of syphilis, the value of the RPCF test in a routine clinical or public health laboratory was as yet not established. Further, the number of weakly reactive RPCF results obtained during the initial studies, together with the problem in anticomplementary reactions encountered, indicated the necessity for a practical evaluation of the test. Therefore, studies were undertaken to determine the value and practicability of the RPCF test in laboratories where complement fixation procedures are routinely employed.

METHODS AND MATERIALS

Six hundred and thirty-nine specimens of blood submitted to the University of California, Los Angeles, T.P.I. laboratory were subjected to the RPCF test in four laboratories. The specimens were obtained from patients in one of the following categories:

1. Patients with either no history or suggestive† history of syphilis but with a reactive STS obtained on previous samples. Such patients were categorized in the three following groups:

(a) Those with essentially negative physical findings.

(b) Those with diseases or conditions other than syphilis.

(c) Those with signs and symptoms suggestive of syphilis.

2. Patients with no history or suggestive history of syphilis, with nonreactive STS obtained on previous samples, but with signs and symptoms characteristic of syphilitic infection.

The specimens were coded, divided into aliquots, and distributed to the laboratories of the Los Angeles City Health Department and the Los Angeles County Health Department and to the Sawtelle Veterans Administration Hospital. An aliquot was retained at the UCLA Laboratory. Each participating laboratory carried out the RPCF test on all specimens, utilizing the one-fifth volume Kolmer method recommended by Portnoy and Magnuson[9] for the *Treponema pallidum* Complement Fixation (TPCF) test.‡ The test was interpreted as follows:

3+ and 4+ = Reactive
± to 2+ = Weakly reactive
Negative = Nonreactive

A specimen of serum of predetermined reactivity was distributed to each laboratory for use as a quantitative control.

TABLE 1.—*Reproducibility of RPCF Test in Laboratory "A"*

Result of Initial Test	Total Specimens	Result of Second Test: Agreement	Disagreement	Per Cent Agreement
Reactive or weakly reactive	237	219	18	92.4
Nonreactive	399	380	19	95.2
Total	636	599	37	94.2

TABLE 2.—*Correlation of Results of 639 RPCF Tests Completed in Each of Four Laboratories*

Laboratory	Total Specimens	Disagreement			Correlation*	
		In 3 Labs	In 2 Labs	Total	Per Cent Disagreement	Per Cent Agreement
A	639	20	44	64	10.0	90.0
B	639	24	44	68	10.6	89.4
C	639	33	44	77	12.1	87.9
D	639	39	44	83	13.0	87.0

*Represents correlation with at least two of the other participating laboratories.

In an effort to determine the possible occurrence of technical error, each laboratory repeated the test twice on separate days if the initial result obtained on a specimen differed from that of the other laboratories. When the results in two laboratories differed from those obtained in the other two laboratories, the test was repeated twice on separate days by all participants. The test was repeated on all specimens by the UCLA laboratory to determine reproducibility; the limited supply of antigen prevented such studies from being carried out completely by the other participants.

The TPI test was performed on each specimen by the UCLA laboratory according to the method of Nelson and Mayer,[8] with modifications as described by Magnuson and Thompson,[5] Thompson and Magnuson[11] and Boak and Miller.[1]

The Venereal Disease Research Laboratory (VDRL) slide flocculation and cardiolipin Kolmer procedures were carried out on each specimen by the Los Angeles City Health Department laboratory according to the methods described in the Manual for Serologic Tests for Syphilis.[6]

EXPERIMENTAL RESULTS

Reproducibility of RPCF Test

Six hundred and thirty-six of the 639 specimens were tested by the RPCF procedure twice, each on a different day, at the UCLA laboratory. Two hundred and nineteen or 92.4 per cent of the 237 specimens showing reactive or weakly reactive results and 380 or 95.2 per cent of the 399 specimens showing nonreactive results were in agreement. Thus, the results of 599 or 94.2 per cent of the 636 specimens tested on different days showed agreement (Table 1). Comparison of the initial results obtained in the four laboratories showed disagreements ranging from 10 per cent to 13 per cent of the 639 specimens tested. Thus, from 87.0 per cent to 90.0 per cent of the results obtained in any individual laboratory were in agreement with those obtained in at least two of the three remaining laboratories (Table 2). Those specimens which showed conflicting results upon being retested on different days are not included in the subsequent analysis of the data from each laboratory, but are presented separately. In addition, 12 specimens on which TPI tests were inconclusive or doubtful, one specimen with anticomplementary reactivity upon quantitative testing with RPCF antigen, and two specimens not tested by one of the procedures due to an insufficient amount were excluded from subsequent consideration.

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†Based on clinical and associated STS impressions.

‡The same lot of RPCF antigen for use in this study was supplied to all laboratories by Organon, Inc., Orange, New Jersey.

Comparison of TPI and RPCF Results

Agreement between TPI and RPCF results in each laboratory ranged from 81.2 per cent to 82.7 per cent (Table 3). Inasmuch as a reactive TPI test has been generally accepted as indisputable evidence of treponemal infection, those specimens exhibiting reactive TPI and nonreactive RPCF tests were considered to be from patients with syphilis, despite the fact that unequivocal data for the presence of the disease were lacking. Similarly, for those patients with blood that was nonreactive to TPI and reactive to RPCF tests the history did not conclusively show the presence or absence of infection with *T. pallidum* and, as a result, no conclusions based on these data can be drawn relative to the sensitivity and specificity of the tests.

TABLE 3.—*Results of TPI and RPCF Tests in Four Laboratories**

Laboratory	Total Specimens	TPI— RPCF—	TPI+ RPCF+	TPI— RPCF+	TPI+ RPCF—	Agreement	
						Number	Per Cent
A	588	314	171	50	53	485	82.5
B	592	301	186	61	44	487	82.3
C	581	302	170	61	48	472	81.2
D	560	308	155	46	51	463	82.7

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

Comparison of Results of TPI, RPCF and STS

The results comparing the two treponemal tests as well as the treponemal and nontreponemal tests are presented in Table 4. The better correlation of results of the TPI and RPCF tests, compared with the agreement between TPI and STS or between RPCF results, is a reflection of the large number of biologic false-positive reactions obtained with the standard procedures. This is well demonstrated by the data presented in Tables 5 and 6, in which 25.2 to 27.7 per cent of the specimens tested in each laboratory exhibited biologic false-positive VDRL or cardiolipin Kolmer reactions. Inasmuch as the VDRL procedure is used by many laboratories as the only screening test, it is of interest to note that from 7.2 per cent to 8.3 per cent of the total specimens tested in each laboratory exhibited nonreactive VDRL and reactive TPI tests. From 3.4 per cent to 5.0 per cent showed reactive RPCF results in the presence of nonreactive VDRL and TPI tests. Further, from 5.6 to 7.1 per cent of the samples showed reactive VDRL and TPI, and nonreactive RPCF tests (Table 5). The fact that from 2.9 to 3.4 per cent of the specimens showed nonreaction to cardiolipin Kolmer tests and from 5.5 to 6.4 per cent showed nonreaction to VDRL tests in the presence of reactive TPI and RPCF results serves to emphasize that maximum detection of present or past syphilitic infection may be obtained only when both VDRL and cardiolipin Kolmer techniques are employed as screening procedures

TABLE 4.—*Agreement Between TPI, RPCF and Standard Serologic Tests for Syphilis*

TESTS	AGREEMENT							
	Lab A		Lab B		Lab C		Lab D	
	Number / Total	Per Cent	Number / Total	Per Cent	Number / Total	Per Cent	Number / Total	Per Cent
TPI vs. RPCF	485 588	82.5	487 592	82.3	472 581	81.2	463 560	82.7
TPI vs. VDRL	362 588	61.6	363 592	61.3	356 581	61.3	340 560	60.7
TPI vs. Cardiolipin Kolmer	362 588	61.6	368 592	62.1	356 581	61.3	344 560	61.4
RPCF vs. VDRL	341 588	58.0	342 592	57.8	327 581	56.3	319 560	57.0
RPCF vs. Cardiolipin Kolmer	357 588	60.7	373 592	63.0	353 581	60.8	337 560	60.2

TABLE 5.—*Results of TPI, RPCF and VDRL Tests*

TESTS*			Lab A		Lab B		Lab C		Lab D	
TPI	RPCF	VDRL	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
—	—	—	162	27.6	152	25.7	152	26.2	157	28.0
+	+	+	138	23.5	148	25.0	135	23.2	124	22.2
—	—	+	152	25.8	149	25.2	150	25.8	151	27.0
+	+	—	33	5.6	38	6.4	35	6.0	31	5.5
+	—	—	12	2.0	11	1.9	7	1.2	11	2.0
+	—	+	41	7.0	33	5.6	41	7.1	40	7.1
—	+	—	21	3.6	30	5.0	28	4.8	19	3.4
—	+	+	29	4.9	31	5.2	33	5.7	27	4.8
Total			588	100.0	592	100.0	581	100.0	560	100.0

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

TABLE 6.—*Results of TPI, RPCF and Cardiolipin Kolmer Tests*

TESTS*			Lab A		Lab B		Lab C		Lab D	
TPI	RPCF	Cardiolipin Kolmer	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
—	—	—	154	26.2	152	25.7	150	25.8	153	27.3
+	+	+	154	26.2	166	28.0	150	25.8	139	24.8
—	—	+	160	27.2	149	25.2	152	26.2	155	27.7
+	+	—	17	2.9	20	3.4	20	3.4	16	2.9
+	—	—	13	2.2	11	1.9	8	1.4	13	2.3
+	—	+	40	6.8	33	5.6	40	6.9	38	6.8
—	+	—	14	2.4	17	2.8	16	2.8	14	2.5
—	+	+	36	6.1	44	7.4	45	7.7	32	5.7
Total			588	100.0	592	100.0	581	100.0	560	100.0

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

(Tables 5 and 6). This is further exemplified by the fact that 29 or 4.6 per cent of 625 specimens tested were nonreactive to VDRL tests in the presence of reactive cardiolipin Kolmer and TPI results (Table 7). The necessity for utilizing a treponemal antigen for specimens that react to one or both of the standard tests is readily apparent from the data presented in Table 7.

Comparison of Results Obtained with Sera Yielding Weakly Reactive RPCF and Weakly Reactive STS

Initial studies on well-documented serum specimens showed that weakly reactive RPCF results reflected a relatively lower sensitivity for the RPCF test when compared with the TPI test without affecting the specificity of the former procedure.[7] Attempts to determine whether use of the RPCF test was a practical adjunct to the STS employed in routine laboratories necessitated a comparison between the weakly reactive RPCF and weakly reactive STS obtained on the specimens that posed a diagnostic problem. In Table 8, the data show that, of the weakly reactive RPCF, VDRL or cardiolipin Kolmer tests, a higher proportion of the RPCF results gave reactive TPI tests than did either the VDRL or cardiolipin Kolmer procedures, thus indicating the relatively higher sensitivity of the RPCF test. With the exception of Laboratory "B," fewer weakly reactive results were obtained with the RPCF than with the VDRL or with the cardiolipin Kolmer tests. The number of weakly reactive cardiolipin Kolmer results in Laboratory "B," however, exceeded those obtained with either the VDRL or the RPCF procedures.

TABLE 7.—*Results of VDRL, Cardiolipin Kolmer and TPI Tests*

TESTS*			Number of Samples	Per Cent
VDRL	Cardiolipin Kolmer	TPI		
—	—	—	118	18.9
+	+	+	178	28.5
+	+	—	136	21.8
—	—	+	19	3.0
—	+	—	75	12.0
+	—	—	58	9.3
—	+	+	29	4.6
+	—	+	12	1.9
Total			625	100.0

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

Anticomplementary RPCF Reactions

Anticomplementary reactions obtained in complement fixation tests necessitated a determination of the frequency of such reactions in the RPCF test. Twelve or 1.9 per cent of the 639 specimens tested in two laboratories and 18 or 2.8 per cent of the same number of specimens tested in the remaining two laboratories showed anticomplementary reactions. In an attempt to obtain a valid result, the

TABLE 8.—*Sensitivity of Weakly Reactive RPCF, VDRL and Cardiolipin Kolmer Tests Utilizing TPI Tests as a Basis for Evaluation*

Laboratory	Test	Total Weakly Reactive Tests	Weakly Reactive Test TPI Reactive	 TPI Nonreactive	Per Cent Weakly Reactive Test and Reactive TPI
A	RPCF	44	34	10	77.3
	VDRL	78	28	50	35.9
	Cardiolipin Kolmer	110	39	71	35.5
B	RPCF	107	69	38	64.5
	VDRL	84	31	53	36.9
	Cardiolipin Kolmer	114	41	73	36.0
C	RPCF	64	37	27	57.8
	VDRL	79	28	51	35.4
	Cardiolipin Kolmer	113	39	74	34.5
D	RPCF	59	43	16	72.9
	VDRL	72	24	48	33.3
	Cardiolipin Kolmer	102	34	68	33.3

test was repeated quantitatively on each specimen with a control for each serum dilution. With one exception, the results correlated with those of the TPI test. The discrepancy occurred in only one laboratory on a single specimen which on retesting twice on different days gave results which agreed with those of the TPI test, suggesting an initial technical error.

Analysis of Sera Showing Discrepant RPCF Results

The number of specimens showing discrepant RPCF results upon being retested twice in the four laboratories ranged from 33 to 68. The results from a single laboratory were considered to be in disagreement if two of the three RPCF tests were nonreactive and weakly reactive or nonreactive and reactive. Reactive and/or weakly reactive results in three separate tests were considered to be in agreement. From 30.3 to 54.4 per cent of the specimens with discrepant RPCF results were reactive to TPI tests. Although the presence of minimal RPCF antibody may be responsible for the lack of agreement, the possibility of technical error cannot be excluded.

Inasmuch as the patients whose blood showed discrepant RPCF and nonreactive TPI tests gave either no history or only a suggestive history of syphilis, interpretation of the relative sensitivity and specificity of the two procedures on the basis of these results cannot be made with any degree of accuracy.

DISCUSSION

The results obtained indicate that, although the RPCF test may be used as an adjunct to the STS routinely employed in clinical and public health laboratories, its limitations must be recognized. Although the test shows a relatively high degree of reproducibility on repeated testing of the same specimens, as determined by one of the four participating laboratories, a considerable number of the specimens that were retested by all laboratories showed discrepant RPCF results. Whether such findings are due to technical error, to the presence of minimal antibody or to errors inherent in the mechanics of the test cannot be determined from the data presented. Thus, it is recommended that the RPCF test be repeated at least once on another day to insure optimal accuracy. If the results are discrepant on subsequent testing, a second specimen of serum should be obtained.

Although the agreement between the TPI and RPCF results is considered satisfactory, the fact that reactive TPI and nonreactive RPCF tests occur on the same specimen must be considered in the interpretation of RPCF results. Such findings tend to support the concept that the RPCF test cannot replace the TPI test but may serve as an additional aid with which to obtain an accurate diagnosis. Conversely, the nonreactive TPI and reactive or weakly reactive RPCF tests obtained on the specimens from patients with no history of syphilis cannot be accurately evaluated. However, the occurrence of nonreaction to TPI tests and reactive or weakly reactive results of RPCF tests on specimens from patients with well-documented treated early syphilis[7] as well as the occurrence of such results in some patients with a history suggestive of syphilis, tends to support the specificity of the procedure. The relatively large number of nonreactive RPCF and TPI tests obtained in the presence of reactive or weakly reactive STS also serves to emphasize the greater specificity of the RPCF test as compared with the VDRL and cardiolipin Kolmer techniques. The results, however, confirm the usefulness of the STS chiefly as that of a screening procedure. The occurrence of nonreactive RPCF tests in the presence of reactive VDRL, cardiolipin Kolmer and TPI results extends the value of these three procedures in the diagnosis of syphilis and precludes the possibility of replacing them with the RPCF test. Further, on the basis of the results obtained, both VDRL and cardiolipin Kolmer tests should be preliminarily employed as screening procedures for the maximum detection of syphilitic infection and the RPCF and TPI methods carried out only on specimens showing reactive or weakly reactive results with one or both procedures. Because of the necessity for testing large numbers of specimens, many laboratories use only the VDRL or comparable flocculation procedures for screening, subsequently employing the cardiolipin Kolmer test on specimens showing reactive or weakly reactive results with the flocculation procedure. Use of the cardiolipin Kolmer test in this manner provides no additional information to the physician, who must have the TPI test performed regardless of the results obtained. The impractical, ineffective use of the cardiolipin Kolmer test in laboratories where large numbers of specimens are to be tested routinely, especially in the light of improved specificity and comparable sensitivity obtained with the RPCF test as shown in this study, speaks for the substitution of the RPCF test for the cardiolipin Kolmer procedure. The latter test is of value, however, in the testing of spinal fluid in suspected cases of neurosyphilis.

Ideally, both RPCF and VDRL tests should be carried out on all specimens to insure maximum detection of present or past infection with *T. pallidum* inasmuch as specimens from patients with treated latent syphilis may be nonreactive to VDRL tests. However, the impracticability of performing the RPCF test on all specimens submitted to public health laboratories precludes doing so.

The occurrence of nonreaction to RPCF tests in the presence of syphilitic infection requires that the TPI procedure be employed as a final test in such circumstances. In areas or countries where facilities are not available for the TPI test, however, the RPCF test may be used with considerable reliability if its limitations are recognized in the serologic diagnosis of syphilis.

The number of anticomplementary reactions obtained with the RPCF test in this study is considered negligible and does not interfere with the practical use of the test. In addition, good correlation was obtained between the results of quantitative RPCF tests on such specimens and those obtained with the TPI test.

Department of Infectious Diseases, University of California School of Medicine, Los Angeles 24 (Carpenter).

REFERENCES

1. Boak, R. A., and Miller, J. N.: A simple medium for maintaining the viability of *Treponema pallidum* in the *Treponema pallidum* immobilization test, Amer. J. Syph., Gonor., and V. D., 38:429-433, 1954.

2. Cannefax, G. R., and Garson, W.: Reiter protein complement fixation test for syphilis, Pub. Health Reports, 72:335-339, 1957.

3. D'Alessandro, G., and Dardanoni, L.: Isolation and purification of the protein antigen of Reiter Treponema, Am. J. Syph., Gonor., and V. D., 37:137-150, 1953.

4. DeBruijn, J. H.: The application of a protein fraction derived from the *Treponema pallidum* (Reiter strain) as an antigen in the sero-diagnosis of syphilis, Antonie Van Leeuwenhoek, 23:201-206, 1957.

5. Magnuson, H. J., and Thompson, F. A.: TPI test of normal and syphilitic serums, J. Ven. Dis. Inform., 30:309-320, 1949.

6. Manual for Serologic Tests for Syphilis: U. S. Dept. of Health, Education, and Welfare, Public Health Service, 1955.

7. Miller, J. N., Boak, R. A., and Carpenter, C. M.: Reiter protein complement fixation test: A preliminary comparison of the TPI test with the complement fixation test employing a soluble protein antigen derived from the Reiter strain, Calif. Med., 88:297-299, 1958.

8. Nelson, R. A., and Mayer, M. M.: Immobilization of *Treponema pallidum*, in vitro, by antibody produced in syphilitic infection, J. Exp. Med., 89:369-393, 1949.

9. Portnoy, J., and Magnuson, H. J.: Immunologic studies with fractions of virulent *T. pallidum*. I. Preparation of an antigen by desoxycholate extraction and its use in complement fixation, J. Immunol., 75:348-355, 1955.

10. Rein, C. R., Kelcec, L. C., D'Alessandro, G., and DeBruijn, J. H.: Sensitivity and specificity of Reiter protein complement-fixation (RPCF) test for syphilis, J. Invest. Derm., 28:459-462, 1957.

11. Thompson, F. A., and Magnuson, H. J.: Studies on increasing the sensitivity of the treponemal immobilization test for syphilis, Amer. J. Syph., Gonor., and V. D., 35-21-34, 1951.

Systemic Use of Corticosteroids in Dermatology

ROBERT G. WALTON, *M.D.*, Modesto, and
EUGENE M. FARBER, *M.D.*, Palo Alto

• The use of corticosteroids systemically in dermatology has benefited patients with pemphigus and systemic lupus erythematosus in that they now have a better chance to carry on a productive life. These hormones, used cautiously, can alleviate some of the tremendous suffering during the explosive exacerbations and acute crises of atopic and neurodermatitis. Corticosteroids are useful in the widespread and acute contact dermatitis and drug eruptions; they are contraindicated in the treatment of ordinary psoriasis.

Every attempt should be made by history-taking, clinical examination and necessary laboratory studies to reach an accurate diagnosis before corticosteroids are used. If use of them is indicated, then total patient care is required to avoid complications, and a very careful follow-up is mandatory.

THE SYSTEMIC USE of the corticosteroids has been of great significance in the treatment of patients with skin disease. In 1951,[1] we published in this journal a clinical evaluation of the corticosteroids in selected kinds of dermatosis. The present report comprises our current impressions after ten years of additional experience.

Since the corticosteroids have become readily available they have been used frequently for their palliative effect. This has lessened the incentive for etiologic approaches in the care of a patient with dermatosis. Consequently, often skin diseases that otherwise would be simple and uncomplicated have progressed without recognition during a period of steroid therapy. The morphologic features of a skin disease are altered during the use of corticosteroids, and the course of the disease is usually unaffected, thereby making diagnosis more difficult. The temporary satisfaction of symptomatic relief may not be worth the extended treatment that may be necessary after cessation of corticosteroid therapy. Indications for the use of corticosteroids in dermatology may be divided into four categories:

1. They may be used as a life-saving agent for long and sometimes indefinite periods in usually fatal skin diseases. This includes pemphigus in which the "massive" dose concept of 400 to 1,000 mg. of cortisone by mouth daily (or equivalent dosage of other corticosteroids) is used until remission occurs. The cortisone dosage is then gradually reduced until a therapeutic maintenance dose is achieved. Also included in this category are the severe forms of bullous erythema multiforme, certain phases of exfoliative dermatitis, and systemic lupus erythematosus. The corticosteroids ameliorate the acute crises in systemic lupus erythematosus and although the "massive" dose treatment has to be used on occasion, often the disease can be kept under control with comparatively small doses. In dermatomyositis and scleroderma, corticosteroids bring about some symptomatic improvement, but otherwise are of limited value.

2. The corticosteroids can be used very effectively for short periods in self-limiting disabling diseases such as contact allergic dermatitis (for example, poison oak), in acute urticaria, and in overwhelming sensitivity reaction to drugs.

3. Their use in various kinds of chronic benign dermatosis is subject to considerable controversy. This group includes psoriasis, lichen planus, seborrheic dermatitis and a variety of eczemas such as atopic dermatitis, neurodermatitis and nummular eczema. Giving corticosteroids for psoriasis of the common type should be condemned. Recently we have seen patients with psoriasis that was confined to the elbows and knees but became generalized following the use of corticosteroids. Corticosteroids may be used cautiously in exfoliative psoriasis that might otherwise cause invalidism, and in the explosive guttate psoriasis, but its use even here is fraught with hazards. In the chronic eczemas such as atopic and neurodermatitis, corticosteroids are best used systemically in acute exacerbations; and only in exceptional cases should they be used for long periods, owing to the hazards involved. It must be borne in mind that the drug is palliative, not curative. Certainly other recognized methods of therapy should be tried first and if corticosteroids are used they should always be accompanied by other accepted methods of systemic and local treatment.

4. There is a group of skin diseases in which corticosteroids are definitely contraindicated, either because they are ineffective or are provocative of additional problems. This group consists of the

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From the Department of Dermatology, Stanford University School of Medicine, Palo Alto.

malignant lesions and other tumors of the skin—with the possible exception of the pruritus sometimes associated with lymphomas, certain metabolic disorders such as the xanthomas, and bacterial, viral, or mycotic infections.

No statistical analysis of the complications from corticosteroids was found in a review of the literature. However, there were many reminders that side effects and serious reactions occur during their use. Much has been written regarding the detrimental effect of corticosteroids, but since the introduction of the newer analogues of cortisone, some of the previously described deleterious side reactions are less common.

It is important that there should be a definite viewpoint for the systemic use of corticosteroids in dermatology. Accurate diagnosis before therapy is initiated is imperative. Otherwise, empirical use of the corticosteroids may lead to tragic error. We have in our files records of seven patients with scabies who were treated from four to eight weeks with systemically administered corticosteroids on a presumptive diagnosis of eczema. There are many patients with contact allergic dermatitis who have been treated for several months with systemic corticosteroids without proper search for the causal agent, either by adequate history or patch testing. Three such instances deserve mention. One patient had dermatitis of the forehead due to allergic reaction to a rubber shower cap; another had eczematous dermatitis of the hands due to reaction to cement, and a third was an infant with generalized contact dermatitis due to sensitivity to a locally applied drug. There is a record also of a person with tinea corporis of many months' duration who was treated with systemic corticosteroids.

Because of the great symptomatic relief that corticosteroids provide, a physician may be lulled into a false sense of security or into diagnostic laziness. At one large clinical laboratory it was observed that since corticosteroids became available the search for parasites in the stools of patients with pruritus ani is now rarely requested, so helpful is the local application of steroid cream. Since the introduction of the corticosteroids there is a greater need than ever before for a careful history, complete examination and laboratory studies, including patch testing. Once the use of corticosteroids has been started, the morphologic and symptomatologic features of the eruption are altered, thus making the diagnosis far more difficult.

Basically the indication for using corticosteroids turns upon answering the question: "Can I find the cause?" If the cause can be found, then corticosteroid use can be carefully qualified. If the cause cannot be found, then one should look for a pharmacologically safer means of treating the patient. If such a means cannot be found or fails after a reasonable trial, then corticosteroids may be indicated for relief of crises. The use of corticosteroids systemically in the presence of viral infection is questionable. There are some observers who believe that herpes simplex, herpes zoster and varicella[3,5] may become disseminated widely over the body because of the use of these hormones during the course of infection. Indeed there have been instances of generalized herpes zoster and generalized herpes simplex occurring during corticosteroid therapy. Goldman[2] said that neither herpes zoster nor varicella has been observed as a complication of corticosteroid therapy in children. However, Olansky, Smith and Hansen-Pruss[4] reported a case of fatal vaccinia associated with cortisone therapy in a patient who also had chronic lymphocytic leukemia and agammaglobulinemia.

1700 McHenry Village Way, Modesto (Walton).

REFERENCES

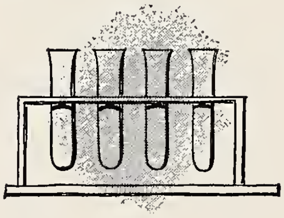
1. Farber, E. M., and Walton, R. G.: Experiences with ACTH and cortisone in selected dermatoses, Calif. Med., 76:149-154, March 1952.

2. Goldman, L.: The treatment of childhood dermatoses with anti-inflammatory steroids, Ann. N. Y. Acad. Sci., 82:994, Oct. 1959.

3. Haggerty, R. J., and Eley, R. C.: Varicella and cortisone, Pediatrics, 18:160-162, July 1956.

4. Olansky, S., Smith, J. G., Jr., and Hansen-Pruss, O. C. E.: Fatal vaccinia associated with cortisone therapy, J.A.M.A., 162:887-888, Oct. 1956.

5. Shee, J. C., and Fehrsen, P.: Reactivation of varicella virus by cortisone treatment, Brit. Med. J., 2:82, July 1953.



Graded Abrasion—A Treatment for Acne

ROSE B. SAPERSTEIN, *M.D.*, Los Angeles

• Long term continuous superficial abrasion with abrasive compounds of various degrees of roughness was used over an 11-year period in over 1,500 patients with acne of all types. The following observations were made:

• That when a material with a specific abrasive quality is used for a period, desquamation stops despite continued use of the material, and then use of material of the next higher degree of roughness is indicated until the patient's skin is blackhead-free and minutely flaky.

• When long term continuous superficial graded abrasion is used alone or with other treatment, it permits the young patients to outgrow the disease with little or no scarring.

• The routine of abrasive washing seems in a large measure to replace the constant fingering of lesions by the patient.

• No untoward effects were observed clinically. There was no hyperpigmentation of Negro or Caucasian skins.

ACNE IS A DISEASE of the skin that begins in the pubertal years, may continue into adult life and is characterized by a series of pathophysiologic phenomena, beginning with a pilosebaceous imbalance in which more sebum is secreted than is excreted, causing plugging of the duct opening and the subsequent dermatopathologic course of events[11]: Comedones, papules, pustules and cysts.

Over-secretion of sebum may be brought about by one or more of the following:

Hormonal stimulation.[14]
Irritation by certain foods or drugs—fish or halogen compounds,[1,6] for example.
Congenitally large pilosebaceous duct openings.
Secondary infection by bacteria.
Emotional stresses of adolescence which increase the activity of the oil glands.

Complicating every type of acne are the numerous secondarily infected lesions produced by the young patients, and sometimes by their parents, in attempting to empty the contents of the lesions. These manipulations, often compulsive in character, frequently lead to unnecessary scarring and pitting.

Treatment

The aim of every physician who treats acne should be to produce a cosmetically acceptable result during the formative years, as well as a scar-free skin when the disease is outgrown or remitted. Ever since dermatologists became interested in the treatment of acne, their aims have been the same: To remove the plugged comedo, which removes much of the potential pathology and ultimate scarring. Although they have employed many means, there has been only one fundamental thought—to get rid of the blackhead.

The present-day treatment of acne generally includes x-radiation, antibiotics by mouth, toxoids and vaccines, local keratolytic agents, hormones and expression of fluctuant lesions.

Since the advent of the use of x-ray,[10] there has been little written concerning local regimens except for the sporadic papers on the use of various antibiotics locally as they become available.[2,3]

Dermabrasion,[8,9] has recently found its place in the treatment of acne sequelae. The present report deals with the development and description of a treatment technique which utilizes long term continuous superficial abrasion during the active phases of acne and seems in a large measure to minimize and prevent the sequelae.

Development of the Concept of Superficial Abrasion

It is common knowledge that most patients with acne appear improved during the summer months following exposure to more intense sunlight, and that relapses occur with the disappearance of the suntan. It can then be supposed that during the exposure to sunlight, desquamation (minute or obvious) takes place, unplugging the pilosebaceous openings; and that when this desquamation stops, the plugs are re-formed and the acne continues.

Efforts to treat patients with mercury vapor quartz lamp radiation are not noticeably successful: nor has the response to the periodic use of peeling pastes been uniformly satisfactory. Many discussions in recent literature deal with the importance of keeping the skin dry and minutely desquamated, implying the use of increasing amounts of keratolytic agents in local medicaments.[15] Recently the use of various synthetic detergents, with and without added keratoplastic and keratolytic agents, has been widely prescribed. While helpful in some cases, these agents are often extremely drying and fail to accomplish the mild, continuous and prolonged desquamation

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that results from sunlight and that seems essential for sustained improvement.

A search was instituted for a single treatment regimen which would induce sustained, continuous desquamation, thereby reducing the number of comedones, papules, pustules and cysts. The use of topically applied abrasives and keratolytic drugs is not new,[15] but little has been written about the long continued use of these agents because the very properties which make them therapeutic also make them irritating.

This presentation outlines an explicit treatment regimen, utilizing graded abrasion as the central therapeutic principle[12,13] in the general treatment of acne.

Many of the patients in the present study complained of intense scaling and redness of the skin after use of the then available abrasive agents that were prescribed at first. However, when the desquamation subsided, the number of comedones was fewer, and the skin appeared smoother. It then seemed wise to reduce the number and/or size of the abrasive particles and to incorporate them in a cleansing base. With this change, both the therapeutic value and the cosmetic acceptability were enhanced.

The original abrasive was chosen arbitrarily and progressively diluted with British Soap Base N. F., until it was possible for patients to use it for long periods without extreme irritation. Through the years, by trial and error, it was learned that polygonal particles harder* than 7 (by Moh's Index)[7] were most desirable and that the abrasion was enhanced when particles of many sizes were used simultaneously. Various abrasive particles were tried, but fused synthetic aluminum oxide,†[5] exhibiting no piezoelectric current[4] was found effective and without granuloma producing properties.

Attempts to potentiate the cleansing acts of soaps or detergents by the use of rough washcloths or facial brushes were unsuccessful, since the presence of hard particles is apparently essential for optimum therapeutic results.

The aim of this treatment is to create desquamation mild enough to be cosmetically compatible with daily living, but therapeutically capable of maintaining patency of the pilosebaceous follicles.

For eleven years, every patient in this study, regardless of the kind of acne, used this long-term continuous superficial abrasion. During these years, less than five patients a year were given roentgen radiation, although the number of patients treated exceeded 1,500. This unusually long clinical trial made possible many observations not previously described.

Continuous abrasion was used alone in the mild comedonal acne, and in addition to other conventional treatment in the more severe types. The few patients who did receive x-ray treatments were usually over 18 years of age, and they were only slightly more improved than those receiving the abrasive treatment alone. No hormones were included in the treatment regimen.

Technique and Observations

The general technique is as follows: On the patient's first visit, a complete history is taken regarding previous treatment, allergic sensitivity to contact materials, course of acne and oiliness of skin. The mildest abrasive soap paste is prescribed.‡ The patient is told to apply it without moistening the skin, to rub it in well with a rotary motion for approximately ten counts to each area and then remove with a washcloth and hot water. The entire washing time takes from one to two minutes—not much longer than the ordinary cleansing routine. This is done three times daily until dryness, redness and desquamation occur. It is emphasized that these reactions are desirable for good therapeutic results, and only if the skin is irritated should the abrasion be interrupted for a day or two. Then the routine is resumed, the patient being told to notice that despite the previous irritative reaction, no further obvious scaling occurs.

After a proper interval, the patient is examined and questioned to make certain that instructions are properly followed, and resistant blackheads may be expressed at that time.

At the end of three or four weeks, the skin appears smoother and the comedones are significantly reduced in number. There may even be a return of oiliness. The next higher grade of abrasive soap paste (medium§) is then prescribed with identical instructions, and the same sequence of events occurs —erythema, dryness and scaling; and these reactions again stop despite continued use of this grade of abrasion paste. By this time, most of the comedones are gone, the skin is smoother appearing and previous pitting is less noticeable.

When the skin remains oily even with continued use of the medium grade, it is time to increase the abrasive strength.¶ Each patient seems to reach an equilibrium, depending on the kind of skin and the kind of acne he has. The optimum therapeutic effect is attained when the skin remains comedo-free and minutely flaky.

Abrasive soap pastes are prepared in three grades, and in addition a paste with the same base but containing no abrasive particles is available.‖ The physician or patient can thus increase the abrasion when necessary (in times of stress and increased oiliness) or decrease it when too much desquamation occurs, as it may with increased exposure to sunlight, or with maturity when the skin is naturally drier.

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*Index of particle Hardness: A property of substances determined by their ability to abrade or indent one another.

†Available as Brasivol® (Stiefel Laboratories, Oak Hill, New York).

‡Brasivol® Fine. (Stiefel Laboratories, Oak Hill, N. Y.)

§Brasivol® Medium.

¶Brasivol® Rough.

It was observed that patients soon learn to control the degree of abrasion and often keep various strengths at home to use as the condition of their skin demands.

This long term continuous superficial graded abrasion is used in all patients with acne vulgaris, regardless of other treatment, which may include adjunctive treatment.* When improvement is accomplished, the adjunctive treatments are discontinued but the abrasion is continued.

Most patients improve appreciably after six weeks of continuous superficial graded abrasion. The patient's tendency to finger and to squeeze the lesions disappears almost entirely, for there are fewer of them and the abrasion routine appears to replace the emotional need to scrutinize and express each lesion. Some patients become careless about the routine and omit the abrasive once the lesions abate, but oiliness and comedones then soon reappear.

Many young patients who have had severe acne with pitting have used this method for several years without consistent medical observation. When seen some months or years later, their acne pits are almost imperceptible.

The same technique is used for patients in their late twenties or in their thirties who have pits and scars but are reluctant to have abrasive treatment with a wire brush or are not suited to this technique.[3] For them, subjective and objective improvement is excellent after six months of this graded abrasion.

It was also found that if mild abrasion is begun after the erythema subsides following wire brush operations, the usual oiliness and small milial cysts do not appear.

Recently, this continuous superficial abrasion was also used for hyperkeratosis palmaris or plantaris due to tinea.

No hyperpigmentation after prolonged use was seen in Negro or Caucasian skins.

The contraindications are few. When there are a number of superficial venules (in rosacea) and/or telangiectasia (actinic sequelae), harsh abrasion is naturally avoided.

643 South Wilton Place, Los Angeles 5.

‖Brasivol® Base. The particle-free base is used in cases in which previously the skin was not washed often enough; in cases in which the skin is very sore with irritated acne or cystic pustular acne; in areas of impetiginization; when the skin gets too irritated during the abrasion phases; when there has been a superimposed sunburn; and at any time when the skin is irritated or sore either before the active abrasion technique is started or during the phases of abrasion. It is also indicated in mature women who have been used to cold creams for cleansing and who have subsequently developed acneiform eruptions. When acneiform or crusted lesions form in the scalp, it is beneficial as a shampoo.

REFERENCES

1. Barefoot, S. W.: Nicotinic acid as an agent for counteracting iodide aggravation in acne vulgaris, Arch. Derm. and Syph., 71:528, April 1955.

2. Becker, F. T.: Evaluation of antibiotics in the control of pustular acne vulgaris, Arch. Derm. and Syph., 72:157, Aug. 1955.

3. Clyman, B., McDonough, W., Donegar, F. X., and Butterworth, T.: Acne vulgaris: A comparison of local remedies, Arch. Derm. and Syph., 67:441-443, Sept. 1950.

4. Evans, S. M., and Zut, W.: Tissue responses to physical forces—The response of connective tissue to piezoelectrically active crystals, J. Ind. Hyg. and Toxicol., 30:383-387, 1948.

5. Facts About Fused Alumina, The Carborundum Company, Niagara Falls, New York, 1954.

6. Gaul, E. L., and Underwood, G. B.: Oral iodine therapy in acne vulgaris, Arch. Derm. and Syph., 58:439, Oct., 1948.

7. Handbook of Chemistry and Physics, 27th Ed., 1955-56, Chemical Rubber Publishing Company, Cleveland, Ohio.

8. Iverson, P. O.: Dermal abrasion, A. J. Nurs., 57:860, July 1957.

9. Kurtin, A.: Corrective surgical planing of skin, Arch. Derm. and Syph., 68:389-397, Oct. 1953.

10. McKee, G. M., and Cipallaro, A. C.: X-rays and Radium in the Treatment of Disease of the Skin, Lea & Febiger, Philadelphia, 1946.

11. Pusey, W. A.: The Principles and Practice of Dermatology, Appleton & Co., New York and London, 1907.

12. Saperstein, R. B.: Read to American Medical Association, San Francisco, June 26, 1958, Treatment of Acne with Long Term Continuous Graded Abrasion.

13. Saperstein, R. B.: Treatment of acne with long term continuous graded abrasion, Arch. Derm. and Syph., 81:601, April 1960.

14. Sulzberger, M. B.: Hormones and acne vulgaris, Med. Clinics of North America, March 1951.

15. Sulzberger, M. B., and Wolf, J.: Dermatology—Essentials of Diagnosis and Treatment, The Year Book Publishers, Inc., Chicago, pp. 250-272, 1952.

Narcotic Addiction

Medical and Legal Problems with Physicians

WILLIAM F. QUINN, *M.D.*, Los Angeles

THE NUMBER OF narcotic addicts in this country is probably not much greater now than half a century ago, although wider press and radio coverage dramatizes the situation. Before the Harrison Narcotic Act it was estimated that there was one addict per four hundred population, whereas the present estimate is one in three thousand. As long as there are unstable people there will be narcotic addicts, and the objective is to reduce the number to an irreducible minimum. The situation is serious, however, and particularly so to the family, friends and colleagues of the addicted person.

Almost twelve years' experience as a member of the California State Board of Medical Examiners leaves me with restrained optimism about the control of narcotic addiction in physicians. At first, there was a feeling of shock in finding addiction among friends whose ability and integrity I had admired over the years. I felt, naively as it turned out, that since they were intelligent men, it would be simple to talk to them about the problem, and convince them of the desirability of doing something about it. They appeared grateful for my interest and my sincere desire to help them, and were anxious to avoid the publicity of eventual conviction, but no good came of it, as their promises meant nothing even though their intentions were good: the habit was much stronger than they were and they continued to divert narcotics to their own use.

Certain published articles imply a tremendously higher rate of addiction in physicians than in the general population, and while this is to a certain extent true, the figures are misleading, for they are based on admissions to hospitals for the treatment of addiction, and represent evidence of the fact that the physician addict will commit himself to an institution in an effort to be cured, whereas most addicts enjoy being addicted and do not at all desire to be cured. Material compiled by Doctor Louis Jones and Mr. Wallace Thompson of the California State Board of Medical Examiners reveals a remarkably high rehabilitation rate—92 per cent—in physician narcotic addicts compared with optimistic figures of possibly 5 per cent in nonphysician addicts. This involves a five to ten-year follow-up of 130 physician addicts.

The California Board, which licenses some 2,000 physicians a year, annually considers about 50 cases of narcotic violations involving physicians. If the violation involves actual peddling of narcotics to addicts, outright revocation of the license to practice medicine is the usual penalty. The exception is made at times for the senile physician who becomes victimized by addicts who can support themselves and sustain their addiction by selling the narcotics he prescribes. The usual device is for them to give a story that their wife has migraine, dysmenorrhea or the like, and the doctor naively prescribes the narcotics. The effective management of a senile physician is to revoke his license to practice medicine but put a stay of execution on the revocation and place him on indefinite probation, one of the terms of the probation being that he be indefinitely prohibited from prescribing narcotics or having them in his possession.

If a physician is addicted and has been in an institution or in jail, or has had no narcotics available to him for a reasonable length of time, then the approach of the Board is one of rehabilitation. It has been our experience that rehabilitation is facilitated by allowing a doctor to practice medicine, but withholding narcotic privileges from him for a period of five years. A penalty is set up in this way: His license to practice medicine is revoked, but there is a stay of execution on the revocation of his license and he is placed on probation for five years. The terms of his probation may vary, but he reports frequently to the Board members, and the important provision is that he surrenders his narcotics stamp and does not prescribe narcotics nor have them in his possession during the five-year period. Interestingly, this does not make for much hardship, as his hospitalized patients can have their narcotics ordered by an anesthetist or a colleague. The penalty of outright revocation of his right to practice hanging over him is very effective. Many times, doctors have said to me that they felt we were harsh and lacked understanding and compassion when we didn't take their word for it that they understood their problem and would not return to the use of narcotics. Invariably, however, they would later

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Submitted June 14, 1960.

state that once or twice or three times during the five-year period when the going was rough and they couldn't sleep, if they had had narcotics available, they would have said, "Well, just for tonight I'll tide myself over," and then would have been addicted again.

They are seen by members of the Board at various intervals, and it is pointed out to them that we want them to stay on the team and that 92 per cent of their colleagues have licked the addiction habit and we feel that they can lick it, too. It is also pointed out rather bluntly that their choice is not very wide since the 8 per cent who return to addiction usually kill themselves.

Medicine is not just a way of earning a living to most doctors—it is a way of life, and the doctor enjoys the affection of his patients, the feeling of triumph when he sees them get well, and the general aura that his work is appreciated. When this is denied to him by outright revocation of his license to practice, it is analogous to placing the average addict on the rock pile, or building roads on the desert. There might be a practical application herein where the average addict could be placed on the rock pile with a sort of indefinite probation, and be released when he showed evidence of rehabilitation, but be returned should he again use narcotics. In any event, the practical effect here, as far as the physician addict is concerned, is a very neat arrangement of the doctrine of the fear of punishment and the hope of reward.

Unhappily, very few physician addicts will break the habit on their own, and the club is necessary. The physician addict originally assumes that he can quit the habit any time he wants to, and that it is a little like alcohol which most people can either take or leave alone. It takes him a long time to realize that, once addicted, he is no different from any stumble-bum on skid row and, in a sense, has to be treated accordingly.

THE "AGONIES" OF WITHDRAWAL

There is a good deal of malarkey about the agonies of withdrawal, as physician addicts have invariably stated that physical dependence on narcotics is gone after a rather rough 72-hours or so. The mental need and the feeling that it would be nice to have narcotics, of course, never leave the addict and he must face this all his life. The length of time a man is addicted apparently doesn't have much bearing on the situation, as I well remember one physician addict of some eighteen years who traveled widely and was usually able to purchase narcotics. He was tremendously overweight, and had chronic phlebitis with leg pains which he felt justified the narcotics. When his physician friends refused to write prescriptions for his leg pains, he forged prescriptions and was apprehended. Since he had made no effort at rehabilitation, his license to practice medicine was revoked outright. He was highly indignant, pointing out that he had been taking narcotics for some eighteen years, and that the phlebitis and the pains in his legs were so severe that he had to have narcotics every four hours. When he did have them, he said, he could function reasonably well in his practice of internal medicine. We pointed out that we did not feel morphine every few hours indefinitely was good treatment for phlebitis, and he left the hearing room quite bitter. He subsequently appeared to petition for restoration of his license, and was a changed man. He had lost a good deal of weight and had not taken narcotics for a year. He stated frankly that to his astonishment, we had done him a great favor. "You know," he said, "I really was addicted and just wouldn't face up to it, but used my phlebitis as a crutch to rationalize my addiction." Interestingly, he said the pains in his legs had lessened to such a degree that they could be controlled with aspirin. His license to practice was restored but narcotic privileges were withheld for a period of five years. As a matter of fact, he stated he never wanted a narcotic license again, as he did not want to have any access to narcotics.

The narcotic addiction danger to physicians is not brought to the attention of medical students. As a result of my experiences on the Board, panel discussions on the subject were initiated about nine years ago at the College of Medical Evangelists. The representatives included law enforcement officers, Board members, psychiatrists, pastors and others interested in the subject. Partly, I hope, as a result of this, only one physician addict has turned up who has been exposed to these discussions.

The idea of establishing clinics for narcotic addicts, where the addict could be furnished narcotics cheaply, has intrigued many well-meaning people. The thought is that if the profit motive were taken away the peddler would disappear and there would be a better chance for rehabilitation. This seems a bit like second marriage; namely, evidence of the triumph of hope over experience, and is somewhat analogous to giving the alcoholic the keys to the liquor store. Proponents of the idea naively assume that the addict is a normal person as long as he can obtain narcotics. They should talk to physician addicts who point out what a meaningless way of life this represents, and that their friends, their family, their profession, their accomplishments, all mean nothing to them. They are merely preoccupied with another "shot" a few hours from now, and of maintaining a state of mild euphoria. Their judgment can be incredibly lacking. As an example, in delivering a baby, one addict in performing an episiotomy nonchalantly cut through into the rectum, and with no sense of remorse whatever and no serious attempt to repair the damage, merely remarked that he must have been a little heavy with the knife. In other words, as far as he was concerned, he was a normal individual at that moment. Another one, in making a house call, took off his coat and gave himself a shot of Demerol in the vein in the presence of the patient and family, and stated, "Well now, I've solved my problem. What's yours?"

Actually, narcotic clinics were tried in the early '20's in most of the major cities in this country, and were abandoned as crime increased instead of decreasing, and addiction actually increased. The fact the proponents seem to disregard is that with easy accessibility to narcotics an addict's tolerance increases and increases, and he still will want more than can be supplied, and will turn to the peddler eventually anyway. The experience of the physician addict himself should disprove the clinics theory, since the physician has had narcotics available to him and diverts his own supply or writes fictitious prescriptions as a rule for a long time before he is apprehended. In fact, it is unusual for a physician to abandon the habit before he is apprehended.

The physician addict may need psychiatric help, but it is seldom effective unless he is institutionalized where narcotics are unavailable to him. One must individualize, however, and I well remember when one physician addict was asked whether or not he had sought psychiatric help, and his explosively indignant answer of, "Hell, no!" so impressed the Board members that they felt he was a good risk for restoration. His subsequent good record justified their judgment. Unhappily also, for those who theorize that an individual is normal as long as he has narcotics, many physicians induce their wives to become addicted.

THE "ENGLISH SYSTEM"

The so-called English system which, in theory at least, allows complete control of dispensing narcotics to addicts to the judgment of the medical profession, is put forth as desirable in view of the reported low incidence of narcotic addiction in England. It should be pointed out, however, that the same laws apply in Canada, and the relative incidence of addiction there parallels that in the United States, whereas in Hong Kong, where the same laws also apply, the amount of addiction is astronomical.

It should also be noted that in England the group having the easiest access to narcotics, namely, doctors, nurses, technicians, and hospital personnel, who constitute less than 1 per cent of the population, constitute 33 per cent of the addicts. It is also of interest to note that the per capita consumption of narcotics in England is slightly higher than in the United States.

The situation is, presumably, evidence that the English are just by nature a law-abiding people, since there are sixteen times as many murders per capita in Chicago as in London, and the United States rate of alcoholism is four times that of the English, and the divorce rate ten times that of the English. The legal process in England is swift and sure, with no such paradoxes as the Chessman case. Differences in the population itself enter into the picture as well, since Negroes, Mexicans and Puerto Ricans, who constitute about 10 per cent of the population in the United States, constitute about 80 per cent of the addicts.

Law enforcement agencies have gotten away from the punitive approach to the narcotic peddler, to one of quarantine. In other words, the peddler is put in jail for life if need be, not particularly to punish him but to quarantine him so he cannot promote more addiction.

The end results of the Cahan and comparable decisions* have been to make the life of the peddler less hazardous, and the cost of heroin decrease; but it serves no useful purpose to castigate the Supreme Court as being political rather than judicial in nature. The remedy lies in legislation.

A classical example of the legal as against the practical approach was in a case heard by the California Board of Medical Examiners wherein the act was one of alleged moral turpitude and involved, among other things, giving liquor to a minor. The attitude of the Board was that in acts involving moral turpitude it should investigate the matter and take into consideration the circumstances, the intent, and all factors, and then make a decision based upon all these facts, assuming that in some instances there would be moral turpitude and in other instances there wouldn't.

The Supreme Court, to the astonishment of the Board, ruled that an act involving moral turpitude must be heinous under all circumstances and, in effect, allowed no flexibility. This threw out a previous specific decision which involved the alleged selling of narcotics to addicts. At the time of the hearing, the witnesses had disappeared, and the only accusation possible was that of failure to keep proper records. Naturally, no one should have his license revoked for a minor failure to keep proper records of narcotics. It seemed logical, however, as evidenced by the decision in this case—which incidentally stood for many years—that there would be a substantial difference between minor failure to keep records and a failure to account for many more narcotics in a few months' time than the average physician would prescribe in a lifetime of practice. It might still be circumstantial evidence, but as Thoreau has said. "finding a fish in the milk is the best evidence that someone put water in it." In any event, this case was specifically ruled as no longer applying, and that was that!

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*Decisions involving strict interpretation of search and seizure laws as well as laws which prohibit keeping the identity of the informer secret.

The upshot of the matter, however, was that it was easy to introduce and have passed legislation which specifically spelled out the fact that the Board of Medical Examiners could have the power to inquire into the surrounding circumstances in cases involving moral turpitude.

Not all cases are alike, even though the financial transactions may be identical. Naturally, the legal profession wishes to protect such freedoms as have been gained after hard fighting and are essentially to protect the innocent from harassment. There must, however, be circumstances in which different rules do apply and the promotion of narcotic addiction would certainly fall into this category, just as the rules are changed in cases in war-time involving treason and espionage.

The difference between peddlers promoting a habit which a man never loses, and which affects his entire life, would certainly justify different rules, just as there is a difference in the lifetime effect of removing a finger or a few ounces of flesh, and removing a man's testicles or a woman's ovaries, even though the amount of tissue might weigh about the same.

In fact, legislation has been introduced in California which would allow evidence in narcotic cases to be introduced, no matter how the evidence was obtained. While effective law enforcement may seem a blunt way of approaching the problem, it should be pointed out that during the war years, when there was complete control and inspection of ships entering and leaving our ports, addiction in this country was at a minimum.

One shouldn't quarrel too much with success. The approach of the problem of kindly encouragement, with removal of easy access to narcotics but with the club of outright revocation for violation, has proven highly successful.

1930 Wilshire Boulevard, Los Angeles 57.

REFERENCES

1. Quinn, W. F.: Narcotic Addiction in Physicians, Bulletin, Los Angeles County Medical Association, April 3, 1958.

2. Jones, L. E., and Thompson, W.: How 92 Per Cent Beat the Dope Habit, Bulletin, Los Angeles County Medical Association, April 3, 1958.

CALIFORNIA MEDICAL ASSOCIATION ANNUAL SESSION

Presidents' Dinner Dance

Sunday, April 30

FOR RESERVATIONS, SEE PAGES 260 AND 261

Coronary Arteriography

HARRY A. BISHOP, *M.D.*, and
BERNARD J. O'LOUGHLIN, *M.D., Ph.D.*, Los Angeles

• The rapid injection of opaque media through a large bore, closed-end, side-hole catheter positioned adjacent to the sinuses of Valsalva reliably opacifies the coronary arteries. The potential toxicity of a rapidly introduced large volume of contrast agent and the necessity of peripheral arteriotomy are drawbacks of this procedure.

Such innovations as loop-ended catheters, balloon occlusion of the aorta, percutaneous arterial catheterization and acetylcholine cardiac arrest have been introduced as attempts are made to increase the reliability and safety of coronary arteriography.

A NEED FOR X-RAY visualization of the cardiac vessels has been stimulated by the development of surgical treatment of coronary artery disease. Evaluation of patients being considered for endarterectomy should include the localization of the occluding atheromata, which can best be accomplished by angiography.[4,20]

Thoracic aortography, wherein contrast material is deposited in the ascending aorta, often delineates the coronary arteries to some extent.[13,19,28] Various methods of administration of the contrast agent have been employed, including needles directed from various sites (sternal,[32] parasternal,[26] transcarotid[24]) or catheters inserted through various arteries (radial,[6,19] brachial,[39] femoral[15]). The use of needles has resulted in cardiac arrhythmias, aortic tearing, extravascular injection and mediastinal hemorrhage. Although using the larger catheters requires peripheral arteriotomy, they have proven to be less dangerous than the needles.

Regardless of the route of administration, the contrast material is swept away within two or three cardiac cycles by the high speed aortic bloodstream. To increase the probability of coronary opacification a high rate of contrast injection is required. The rate of flow of the contrast fluid is proportional to the fourth power of the catheter diameter and to the pressure of injection. It is inversely proportional to the fluid viscosity and catheter length. Thus, to increase the injection rate a maximum catheter diameter is most important. Increasing the diameter from 1 mm. to 3 mm. makes possible an 81-fold increase in flow rate.

In our present method of coronary arteriography a 3 mm. inside diameter radiopaque catheter is introduced through a femoral arteriotomy and under fluoroscopic observation the tip is positioned adjacent to the sinuses of Valsalva. At this point, 0.7 cc. per kg. of 50-70 per cent iodinated contrast medium, heated to body temperature to reduce viscosity, is introduced under a pressure of 6 kg. per cm.^{2} with an automatic injector. The catheter has several small spirally arranged side holes near the closed tip[15] to reduce recoil and give better distribution of the opaque medium. A flow rate of 60-90 cc. per second is achieved. The coronary arteries thus opacified are recorded by simultaneous biplane x-ray exposures taken at the rate of 6 per second.

By this method dependable coronary visualization results. Figure 1, for example, shows a coronary angiogram in which 45 cc. of Ditriokon® was introduced in 0.7 second. The patient is a 43-year-old

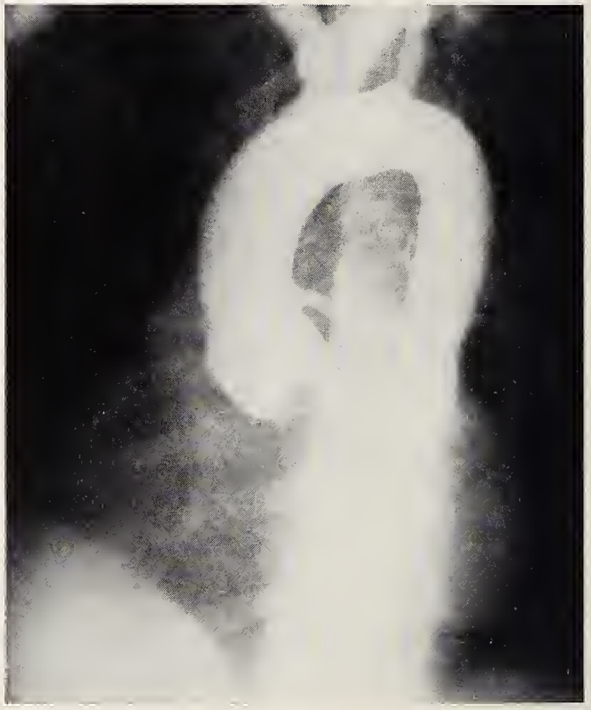

Figure 1.—Coronary arteriogram of a patient with angina pectoris. The right coronary artery is occluded near its origin and the left is narrowed at its bifurcation.

From the Department of Radiology, University of California at Los Angeles School of Medicine, Los Angeles 24.

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man with diabetes who had had myocardial infarction five years previously and had had disabling angina for two years. The angiogram showed that the right coronary artery was occluded near its origin and that there was a narrowing of the left coronary at the bifurcation. These observations were confirmed on the following day when endarterectomy was performed on the occluded right coronary artery.

While this technique of angiography does give visualization of the coronary arteries, it entails the inconvenience of peripheral arteriotomy and the significant danger of toxicity associated with injection of contrast media.

In an analysis of over 1,700 thoracic aortographic examinations performed with organic iodides, Abrams[1] noted a 1.7 per cent mortality and a similar percentage of severe reactions including hemiplegia, convulsions and anuria. There were eight times as many deaths associated with the use of 70 per cent contrast solutions as with the 30 to 50 per cent solutions.

Experimental studies[14,16,27] have shown that all the currently available angiographic contrast media produce some toxic effects when used for coronary visualization.

Since the pioneer experiments in 1932 by Rousthoi[34] in Germany and Reboul and Racine[33] in France, a number of investigators[12,22,31] have attempted to improve coronary arteriography in experimental animals. Direct catheterization of the individual coronary arteries is feasible in dogs,[40] and has recently been achieved in humans by Sones.[38] The method requires considerable technical skill and is associated with the possible hazard of coronary ostia occlusion. The individual sinuses of Valsalva, however, may be catheterized with less danger, thereby achieving selective opacification of the right and left coronary arteries.

Loop-End Catheter

Williams and coworkers,[41] using a polyethylene catheter with a perpendicular loop at the end, produced detailed coronary angiograms. With the loop positioned above the aortic sinuses, three side holes in the circumference emit streams of opaque media directed toward the coronary ostia. The curved end is straightened over a guide wire for introduction by way of a peripheral artery. While this ingenious device shows considerable promise, there is some danger of blood clotting in the catheter beyond the proximal side holes, causing embolization.

Balloon Occlusion

One method of overcoming the aortic blood flow and reducing the amount of contrast material is aortic occlusion. A metal sound with a distensible balloon just above the coronary ostia was originally developed by Agress.[2] A similar device introduced through the carotid artery was applied to coronary arteriography by Cannon[5] and McFall.[25] The use of a balloon occlusion catheter by Dotter and coworkers[7] resulted in excellent coronary studies in dogs, but attempts at human application have been frustrating. It is difficult to maintain the position of the balloon in the aortic bloodstream and sometimes it tends to herniate through the aortic valves or occlude the coronary ostia. Increased cardiac work associated with hypertension proximal to the balloon might prove dangerous in patients with coronary insufficiency. Another disadvantage is that it necessitates an arterial cut-down big enough for the relatively bulky balloon catheter.

Cardiac Arrest

A promising technique is that of coronary visualization during pharmacologically induced cardiac arrest. Acetylcholine has proven to be the ideal agent for this purpose. When introduced into the proximal ascending aorta it produces almost immediate cardiac arrest in diastole. An asystole of a few seconds' duration is reliably controlled by the dose administered. As the drug is inactivated by tissue contact, cardiac contraction resumes and, after a fleeting partial heart block, regular sinus rhythm is reestablished. If necessary the action of acetylcholine can be stopped instantaneously by atropine. the ideal antidote.

The investigations of Dotter and coworkers,[7] Arnulf,[3] and Fabrikant and coworkers[10] have shown acetylcholine arrest to be safe and reliable in dogs with normal and ischemic hearts. Electrocardiographic monitoring, serum transaminase determinations and histologic examinations have failed to detect any significant myocardial alterations following repeated episodes of acetylcholine arrest. Our own observations confirm the safety of this procedure in the experimental animal.

This technique would seem to offer several advantages. The coronary arteries which normally fill during diastole show excellent filling during arrest and a capillary filling phase appears which delineates the myocardial walls. A smaller amount of less concentrated contrast material can be used, thus greatly reducing one of the primary hazards of this procedure. And since the extremely rapid flow of contrast is not required. a smaller catheter may be introduced percutaneously,[8,30,35] thus obviating the necessity of arterial cut down. During cardiac arrest there is no need for rapid sequence filming. short exposures and precise exposure timing. Hence, no special x-ray equipment is required.

Acetylcholine, which causes peripheral vasodilatation, apparently does not inhibit coronary spasm.

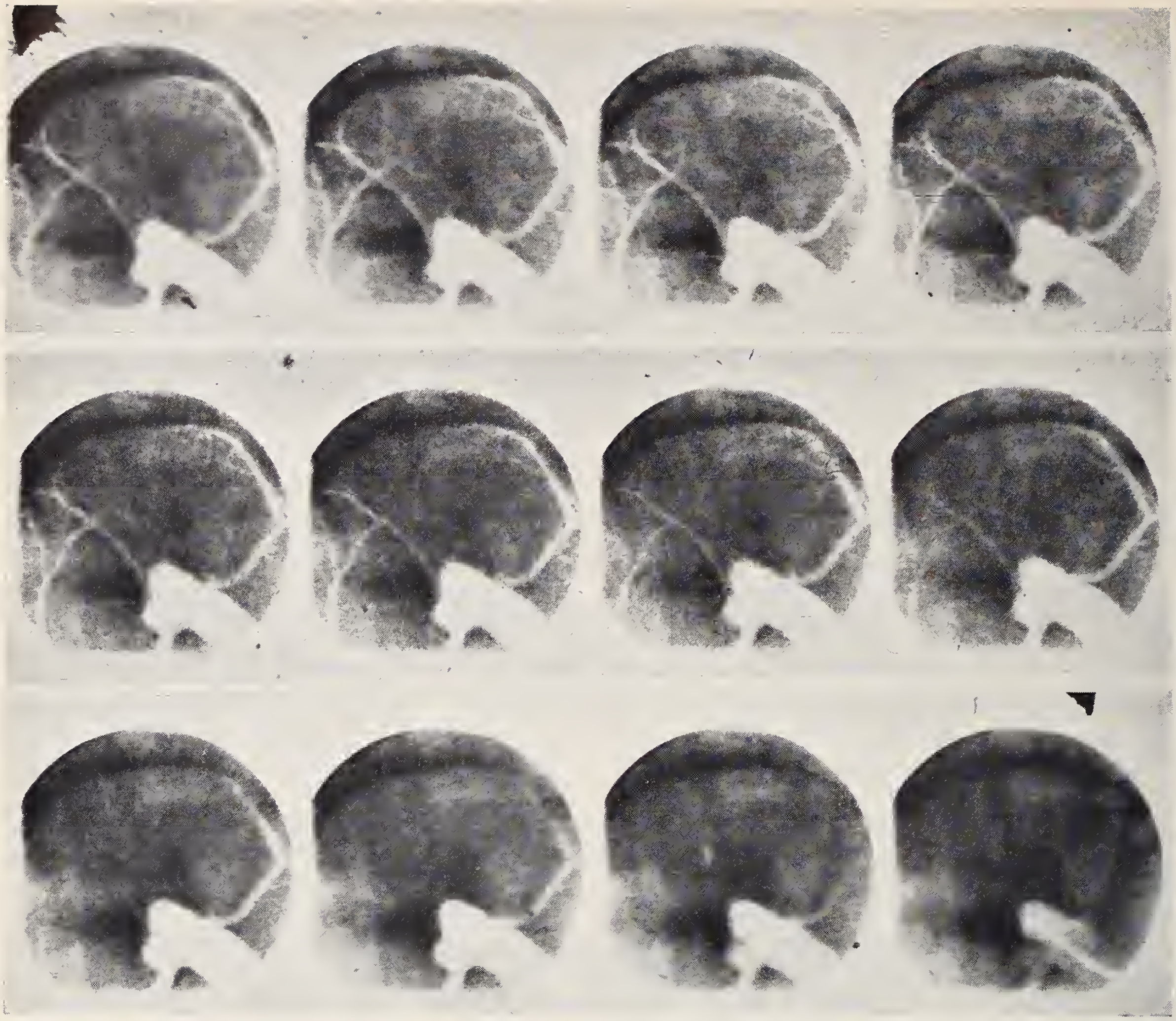


Figure 2.—Sequential frames from a 16 mm. cine angiogram of a dog showing progressive filling of the coronary arteries.

Using acetylcholine arrest. Arnulf[3] demonstrated decided spasm of the coronary arteries while the patient was suffering angina pectoris. Another examination, after the angina was relieved by a coronary vasodilatator, showed normal-appearing coronary arteries. It is interesting that this technique has demonstrated operable coronary occlusive disease in the absence of electrocardiographic changes.[4]

Although harmless in dogs, the safety of cardiac arrest angiography remains to be established in humans. Dotter and coworkers[7] reported a fatality resulting from the use of acetylcholine in a digitalized patient. In combination with digitalis, acetylcholine causes myocardial irritability rather than cardiac arrest. In the case reported by Dotter, irreversible ventricular fibrillation occurred. Lehman and coworkers[21] reported convulsions on several occasions when this technique was used. However, it is not clear whether the cardiac arrest or the contrast agent toxicity was responsible. While the group of patients reported by Arnulf[3] had no ill effects from the transient cardiac standstill, moderate bronchospasm occurred when the acetylcholine was given intravenously.

A possible disadvantage of the cardiac arrest method is that changes that occur during the cardiac cycle are not demonstrated. It has been noted for instance, that the left coronary artery becomes tortuous during systole and that the aortic diameter increases, giving a potential measure of arterial distensibility.[17]

The establishment of acetylcholine arrest arteriography awaits further clinical trial.

The combination of balloon occlusion and cardiac arrest has resulted in beautifully detailed coronary studies in dogs[11] and this method would seem safer than balloon occlusion alone for human application.

Motion Pictures

The anatomic and physiologic information obtainable from coronary angiography may be increased by cinefluorographic recording. We have used this method in the evaluation of cardiac arrest arteriography in dogs (Figure 2). Winter and Lehman[42] used cinefluorography to record acetylcholine arrest coronary angiograms as the animal was being rotated. A three-dimensional appreciation was obtained as the dog rotated through a full 180° cycle during the film sequence. Sloman[37] reported on the use of cinefluorography of the aortic valve and coronary arteries during cardiac arrest in humans. This technique will improve as larger image intensification screens are perfected.

Sones and coworkers[38] used x-ray motion pictures to show the areas of distribution of the major coronary vessels as they were serially opacified by contrast injected into the sinuses of Valsalva or into the individual coronary ostia.

The unsolved problem in coronary angiography is the toxicity of the available radiopaque contrast agents. Dotter advocated the use of thorium dioxide, which is free of the immediate toxic effects of the other agents and produces excellent opacification. However. it is very irritating if accidentally deposited in the soft tissues, and, being radioactive, probably has a long-term carcinogenic effect.[23] As other forms of contrast agents such as the heavy metal chelates[36] are investigated, a safer agent may be discovered.

Should a less toxic opaque material be developed and should transient cardiac arrest prove innocuous, coronary arteriography should become a routine diagnostic study for all patients suspected of having coronary artery disease.

U.C.L.A. School of Medicine, Los Angeles 24 (Bishop).

REFERENCES

1. Abrams, H. L.: The hazards of retrograde aortography: A survey, Radiology, 68, 6:812,824, June 1957.

2. Agress, C. M., et al.: Protracted shock in the closed-chest dog following coronary embolization with graded microspheres, Am. J. Physiol., 170:536-549, Sept. 1952.

3. Arnulf, G.: Systematic coronary arteriography with acetylcholine cardiac arrest, Progress in Cardiovascular Diseases, 2, 3:197-206, Nov. 1959.

4. Baily, C. P., Morse, D. P., and Lemmon, W. M.: Thromboendarterectomy for coronary artery disease, Am. J. of Cardiology, 5, 1:3-13, Jan. 1960.

5. Cannon, J. A., Clifford, C. J., Diesh, G., and Barker, W. F.: Accurate diagnostic coronary arteriography in the dog, Surg. Forum, 6:197-199, (1955) 1956.

6. Coelho, E., Fonseca, J. M., Nunes, A., and Pinto, R.: L'arteriographie des coronaires chez l'homme vivant, Cardiologia, 22:45-62, 1953.

7. Dotter, C. T., Frische, L. H., Hoskinson, W. S., Kawashima, E., and Phillips, R. W.: Coronary arteriography during induced cardiac arrest and aortic occlusion, A.M.A. Arch. Int. Med., 104, 5:720-729, Nov. 1959.

8. Dotter, C. T., and Smith, J. R.: Technique for nonsurgical insertion of large polyethylene tubing into blood vessels, Circulation, 18:4, 640-643, Oct. 1958.

9. Euler, H. D.: Die perosophageale Aortenpunktion, ihre diagnostischen and therapeutischen Moglichkeiten, Arch. f. Ohren, Nasen und Kehlkopfh, 155:536, 1949.

10. Fabrikant, J. I., Anlyan, W. G., Baylin, G. J., and Trumbo, R. B.: A comparison of techniques for visualization of the coronary arteries, Am. J. Roentgenol., 81:5, 764-771, May 1959.

11. Frische, L. H., and Dotter, C. T.: An improved method of coronary arteriography, Dis. of Chest, 35:5, 546-553, May 1959.

12. Grossman, N.: Visualization of the coronary arteries in dogs, Am. J. Roentgenol., 54:57-59, July 1945.

13. di Guglielmo, R., and Guttadauro, M.: A roentgenologic study of the coronary arteries in the living, Acta radiol. Supplementum, 97, 1952.

14. Guzman, S. V., and West, J. W.: Cardiac effects of intracoronary arterial injections of various roentgenographic contrast media, Am. Heart J., 58:4, 597-607, Oct. 1959.

15. Haight, C., Figley, M., Sloan, H., Waverly, J., Meyer, J., Berk, M., and Boblett, D.: Coronary arteriography (abstracts of the 31st scientific sessions), Circulation, 18, 4:732, Oct. 1958.

16. Hase, O., and Deterling, R. A.: Evaluation of contrast media employed for aortic and coronary visualization, Surg. Forum, 8:320-324, 1957.

17. Hase, O., Holaday, D. A., and Deterling, R. A.: Studies in coronary arteriography, Radiology, 73, 5:785-786, Nov. 1959.

18. Helmsworth, J. A., McGuire, J., Felson, B., and Scott, R. C.: Visualization of the coronary arteries during life, Circulation, 3:282-288, Feb. 1951.

19. Jönsson, G.: Visualization of the coronary arteries: Preliminary report, Acta radiol., 29:536-554, 1948.

20. Kattus, A. A., Longmire, W. P., Cannon, J. A., Winfield, M. E., and Davis, J. H.: Diagnostic and functional evaluation of candidates for coronary endarterectomy, A.M.A. Arch. Int. Med., 104, 6:870-885, Dec. 1959.

21. Lehman, J. S., Boyer, R. A., and Winter, F. S.: Coronary arteriography, Am. J. Roentgenol., 81, 5:749-763, May 1959.

22. Levy, L. M., Hannon, D. W., Sprafka, J. L., and Baronofsky, I. D.: A method of coronary arteriography, Ann. Surg., 143, 3:412-415, March 1956.

23. Looney, W. B.: An investigation of the late clinical findings following thorotrast (thorium dioxide) administration, Am. J. Roentgenol., 83, 1:163-185, Jan. 1960.

24. Marion, P., and Papillon, J.: Aortographie thoracique retrograde intra-carotidienne (application a l'arteriographie des coronaires), Press med., 58:1474-1477, Dec. 25, 1950.

25. McFall, R. A., Dowdy, A. H., and O'Loughlin, B. J.: Reaction of the heart to selective angiocardiography, Am. J. Roentgenol., 30, 3:394-406, Sept. 1958.

26. Meneses, H. J., and del Campo, C. G.: Direct thoracic aortography and arteriography of the coronary vessels, Cardiologia, 23:251-254, 1953.

27. Miller, E. W., Hughes, C. R., and Kolff, W. J.: Angiography of the coronary arteries in the live dog. II. Detection of abnormalities, Cleveland Clin. Quart., 24:41-48, Jan. 1957.

28. Nelson, S. W., Molnar, W., Klassen, K., and Ryan, J.: Aortic valvulography and ascending aortography, Radiology, 70:697-712, May 1958.

29. Nuvoli, I.: Arteriografia dell' aorta ascendente o del ventriculo s., Policlinico (sez. prat.), 43:227-237, Feb. 10, 1936.

30. Odman, P.: Thoracic aortography by means of radiopaque polyethylene catheter inserted percutaneously, Acta radiol., 45:117-142, 1956.

31. Pearl, F.: Coronary arteriography in the intact animal, J. Internat. Coll. Surgeons., 18:40-50, July 1952.

32. Radner, S.: An attempt at the roentgenologic visualization of the coronary blood vessels in man, Acta radiol., 26:497-502, 1945.

33. Reboul, H., and Racine, M.: La ventriculographie cardiaque expérimentale, Press. med., 1:763-767, May 10, 1933.

34. Rousthoi, P.: Uber Angiokardiographie. Vorlaufige Mitteilung, Acta radiol., 14:419-423, 1933.

35. Seldinger, S. I.: Catheter replacement of needle in percutaneous arteriography, Acta radiol., 39:368-376, 1953.

36. Shapiro, R., and Papa, D.: Heavy metal chelates and cesium salts for contrast radiography, Ann. N. Y. Acad. Sci., 78, 3:756-763, July 1959.

37. Sloman, G.: Cine-aortography for visualization of the aortic valve and coronary arteries, Proc. Royal Soc. Med., 52:460-461, June 1959.

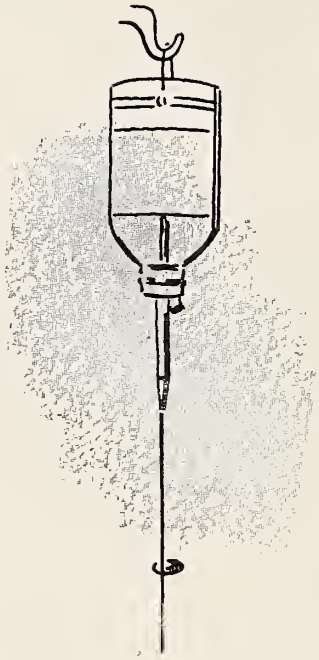
38. Sones, F. M., Shirey, E. K., Proudeft, W. L., and Westcott, R. N.: Cine-coronary arteriography. *In* abstracts of the 32nd scientific sessions of the American Heart Assn., Circulation, 22, 4, Part 2, 773, Oct. 1959.

39. Thal, A. P., Lester, R. G., Richards, L. S., and Murray, M. J.: Coronary arteriography in arteriosclerotic disease of the heart, Surg., Gynec. and Obst., 105:457-464, 1957.

40. West, J. W., Kobayashi, T., and Guzman, S.: Coronary artery catheterization in the intact dog, Circulation Res., 6:383-388, May 1958.

41. Williams, J. A., Littmann, D., Hall, J. H., Bellman, S., Lambert, P. B., and Howard, F. A.: Coronary arteriography, N.E.J.M., 262:328-332, Feb. 18, 1960.

42. Winter, F. S., and Lehman, J. S.: Rotational cinefluorography, Am. J. Roentgenol., 81, 1:120-124, July 1959.



Hardware in Orthopedic Surgery

HOWARD A. MENDELSOHN, *M.D.*, Beverly Hills

• Insertion of foreign material into the human body has been performed with increasing frequency during the past 50 years and has received added encouragement in the antimicrobial era. Nevertheless, no matter how rational the utilization of these inflexible foreign bodies may seem, their introduction into the human framework is accompanied by evidence of nature's intolerance to hardware when substituted for living tissue. Numerous surgical complications occur following the use of internal fixation and prosthetic devices in orthopedic surgery.

THE USE OF RIGID MATERIALS, such as metal and plastic resins, for prosthetic and reconstructive devices holds a special allure for orthopedic surgeons. Insertion of foreign objects into the human body has been performed with increasing frequency during the past 50 years and has received added encouragement in the antimicrobial era. A comprehensive historical review along with a wealth of other relevant information regarding the use of metallic implants is provided in the recently published book of Bechtol, Ferguson and Laing.[1]

There are recorded instances of the use of metal for internal fixation of fractures in the 18th Century: Iron, gold, silver, lead, platinum, brass, aluminum, magnesium, copper, zinc and nickel all have been wrought ingeniously into devices which were implanted in or onto human bones. More recently the plastic resins have been tested in the crucible of experimental surgery. Vanadium, triconium, tantalum and titanium[2] had their day in the surgical sun, and in fact still offer considerable appeal to the orthopedic engineers. The present era looks with favor most upon stainless steel and vitallium, which are regarded as having the least objectionable and the most acceptable qualifications for *in vivo* implantation. New metal alloys are currently being tested extensively both in animals and in humans, apparently with the hope that living tissue will learn not to resent foreign intrusion.

Nevertheless, no matter how rational the utilization of inflexible foreign bodies may seem, their introduction into the human framework evokes evidence of nature's intolerance to hardware when substituted for living tissue. Surgical complications frequently encountered following the use of internal devices for fixation and prosthesis include wound infections, unfavorable foreign body reactions, postoperative fractures of the devices and of the bone into which they are introduced, and numerous manifestations of nature's attempts to sequestrate or extrude extraneous material. Evidence of these natural responses takes many forms, and McDougall's[5] report of a malignant tumor developing in the soft tissues at the site of a bone-plating operation performed 30 years before exemplifies one kind of tissue reaction to metal corrosion and electrolysis. McDougall concluded that "a careful consideration of the history and clinical course [of the case] indicates that the tumor arose because of the presence of the metals."

Such admonitions are, of course, not new, and it would seem appropriate to quote King's[4] comments on this subject: "Laymen and even some physicians tend to think of bone as an inert, unchanging substance and that a metallic implant is even more static and indestructible. Nothing could be further from the truth. Metals tend to oxidate or corrode, this process being assisted by the acid environment of a fresh fracture, the salinity of tissue juices or the electrochemical action of dissimilar metals of an electrolytic process set up between areas. Furthermore, it is now recognized that corrosion may occur between two pieces of similar metal or between different areas of the same plate because of varying degrees of hardness. Against this, metal has a limited capacity to resist corrosion by the spontaneous formation of a thin film of oxide on its surface. Scratching or bending a metallic implant during insertion removes this protective film and hastens the corrosive process. Metals continually shed so that the surrounding soft tissues are slowly saturated with metal which may lead to aseptic inflammation many years after implantation. For this reason metallic implants in young or middle-aged people should always be removed when they have served their purpose."

On the Orthopedic Service at Los Angeles County General Hospital, an astounding quantity of metal and plastic contrivances has had to be removed from bones and joints because of various complications. Approximately 40 pounds of such exotic material excised during the period January 1959 to January

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From the Department of Orthopedic Surgery, Los Angeles County General Hospital, and School of Medicine, University of Southern California, Los Angeles 33.

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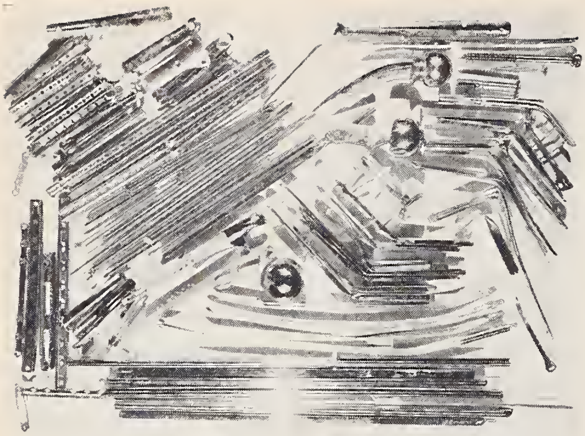


Photograph exhibiting variety of hardware excised during an eleven-month period, 1959-1960, at Los Angeles County General Hospital. The total weight was about forty pounds.

1960 is now carefully stored at this hospital for the agonizing reappraisal of the staff orthopedists, who were not necessarily responsible for the insertion of these devices. This metallic avoirdupois does not include standard-sized metallic screws, uncounted numbers of which were removed and immediately discarded. I believe it would be fair to regard the figure of 40 pounds mentioned above as an understatement. The number of patients operated upon and the diagnosis in each case are not considered pertinent to this discussion. However, it is relevant to mention that the Orthopedic Service had 5,187 in-patients in the fiscal year 1958-59.

In 1941, Key[3] warned that internal fixation of fractures should be undertaken only when such intervention would be essential to the successful management of the case. Key's voice, it would seem, is in danger of being muted by the rising clank and clangor of the Metal Age.

It does not seem amiss therefore in a surgical era of hardware and gadgetry to offer a gentle reminder that new techniques in metallurgy and carpentry need not be equated with progress in orthopedic surgery.

415 North Camden Drive, Beverly Hills.

REFERENCES

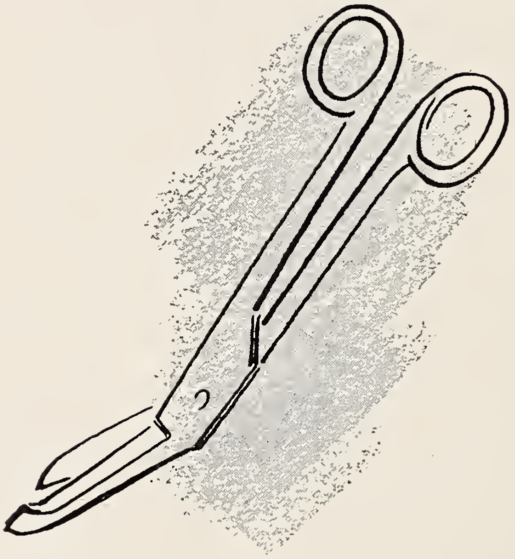
1. Bechtol, C. O., Ferguson, A. B., Jr., and Laing, P. G.: Metals and Engineering in Bone and Joint Surgery, Williams & Wilkins Co., Baltimore, 1959.

2. Jergesen, F. H.: Studies of Various Factors Influencing Internal Fixation as a Method of Treatment of Fractures of the Long Bones. Report to National Research Council, Dec. 1951.

3. Key, J. A.: Stainless steel and vitallium in internal fixation of bone, Arch. Surg., 40:867, 1940; Arch. Surg., 43:615, 1941.

4. King, D.: Calif. Med., 91:303, Nov. 1959.

5. McDougall, A.: Malignant tumour at site of bone plating, J. Bone and Joint Surg., 38-B:709-713, Aug. 1956.



The Electroencephalogram in Pediatrics

The Indications for Use and the Limitations

MERL CARSON, *M.D.*, and RICHARD D. WALTER, *M.D.*, Los Angeles

• Electroencephalograms normally undergo pronounced serial changes during maturation of the brain.

Many physiological and nonphysiological influences may alter the EEG tracing.

As regards EEG's, appraisal of cerebral function is based on comparison with normal standards of frequency, rhythm, wave configuration and amplitude, bilateral synchrony, and response to various physiological stimuli.

Various abnormal EEG patterns are fairly constantly related to concomitant clinical disease.

A laboratory tool which may be used to supplement clinical data but not to make a clinical diagnosis, the EEG may also sometimes be of value in helping to suggest prognosis and in helping with evaluation of a therapeutic program.

ELECTROENCEPHALOGRAPHY, the study of electrical activity of the brain, has been made possible by development of electronic machines which amplify and record this activity upon a moving chart. The activity in numerous parts of the head is simultaneously tested through individual amplifiers, and from these recordings an accurate appraisal of departures from norms can be made. Electrical activity recorded in any one amplifier (channel) does not represent total discharge from a single underlying segment of brain. but represents the difference in electrical potential between two areas underlying two connecting electrodes.

Cellular physiologists have concluded that periodic electrical discharges are a function of all living cells. The exact mechanism may not be entirely elucidated but a difference between intra- and extra-cellular potential is apparently a function of the semipermeable cell membrane and ionic transfer. It is likely that these discharges are the by-product of cellular metabolism and ordinarily have no specific function. The origin of these discharges in the central nervous system was formerly thought to be the axons of nerve cells. New histochemical evidence suggests instead that they may originate in apical dendrites of the third cortical layer.

Serial electroencephalograms normally undergo pronounced changes during the period of anatomical and functional development of the brain. It is postulated that the earliest cortical. electrical activity appears when adequate numbers of nerve cells have developed there, even before definitive interneuronal connections are established. Then, as the number of cells increases, there is increase in amplitude with continued lower frequency waves; and at last as myelination and functional connections become complete, the wave amplitude decreases and the frequency increases, developing into the mature, adult wave pattern.

Studies by Lindsley, Henry, Smith, Gibbs and others have clarified details of the normal maturing electroencephalogram (EEG) of children. At birth, irregular, slow 0.5-3.5 cps. (cycles per second) waves are present over the cortex with accentuated activity over the parietal areas. At six months there is high voltage, 4-6 cps. activity maximal over temporal and occipital areas, which increases to 5-8 cps. by one year of age. especially evident over the occipital area. By four to five years there is a steady 7-8 cps. activity in the occipital area, which increases to the adult 9-10 cps. wave pattern by nine years. At this age, however, an excess of slow 5-7 cps. waves is still present over the parietal and temporal areas. Typical adult patterns are frequently seen at age 12 years and by 19 years almost all persons have adult configurations.

Physiological Variables. The normal EEG may be influenced by many physiological variables,[12,15] some of which are incorporated in the routine study of each patient. Drowsiness and sleep profoundly affect the EEG, causing slowing and increased amplitude of waves. This pattern may appear in short runs and be confused with seizure discharges. High voltage. spike-like 3-8 cps. waves, termed *biparietal humps* are common over frontal and parietal areas up to nine years of age. With increasing age they tend to become smaller and are more confined to the parietal areas. Sleep spindles of 12-14 cps. are evidence of light sleep and tend to disappear with deeper sleep. Very deep sleep is characterized by generalized slow 0.5 to 2.0 cps. waves. Hyperventilation for a standard period of three minutes re-

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From the Division of Neurology, U.C.L.A. Medical Center, Los Angeles 24.

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sults in the reduction of carbon dioxide tension in blood and tissue fluids. Cortical pH increases and cortical electrical discharges become greater in amplitude and slower in frequency. Certain neurological disorders may be symptomatically induced by this cortical stimulation, such as initiation of convulsive phenomena in patients with petit mal epilepsy. Oxygen and glucose constitute the main energy sources of the brain. A decrease of 30 per cent in internal jugular vein blood oxygen tension results in a sudden shift of cortical activity to slower frequencies. Glucose oxidation accounts for over 90 per cent of brain cell respiration and a deficiency thereof results in a steady lowering of cortical electrical activity. Light-stimulated epileptic seizures have long been recognized and Berger first noticed alteration of normal EEG rhythm by photic stimulation of the retina.

It is common for clinicians to be doubtful regarding proper indications for an EEG examination. The procedure is valuable in providing a safe, easy method of evaluating functioning cerebral activity. Therefore, it can be helpful in evaluating patients with convulsive disorders or other clinical conditions that suggest cerebral functional abnormality. It is a supplement to clinical observation, not a substitute for it. As a laboratory procedure it is subject to various limitations and artifacts.

Evidences of cerebral malfunction are necessarily somewhat limited by the mechanical, two dimensional tracings. Tracings are adjudged normal because of conformance with standards of the frequency of rhythm, wave configuration and amplitude, bilateral synchrony, and response to various physiological stimuli such as hyperventilation, sleep and photic stimulation. Variation in these components is due to alteration of cellular electrical activity caused by altered intracellular metabolism. Although this metabolic abnormality may be due to a wide variety of causes, there is so little difference among them insofar as EEG activity is concerned that making fine etiological classification of abnormalities is exceedingly difficult or impossible, except in a certain few instances. This is particularly evident in patients with seizures that are secondary to anatomic cerebral abnormality (symptomatic epilepsy).

SYMPTOMATIC EPILEPSY

The abnormalities of symptomatic epilepsy may be derived from widely diverse causes. Birth trauma and anoxia, inflammatory diseases of the brain and meninges, and abnormalities of development are the most common factors in early infancy and childhood. In older children metabolic disorders and trauma assume greater importance. The brain damage may be diffuse or localized, mild or severe. In severe cases considerable neuronal destruction may result in an area or areas of electrical silence. Nearby cortex may contain normally functioning neurons with interposed cortical neurons damaged and functioning in an abnormal manner. Discharges from this abnormally functioning area cause the periodic seizures seen in patients with symptomatic epilepsy. Diffuse cerebral damage is usually reflected by varying seizure patterns such as generalized, myoclonic massive spasms.

The great majority of clinical seizures are referable to anatomic cerebral damage. Etiological factors responsible for the damage may be grouped into several large categories.

1. *Physical and Toxic:* (Trauma and anoxia); birth injury; anoxia; closed head injuries; cerebral vascular occlusion; poisoning (lead, thallium, barbiturate, etc.); subdural hematoma.

2. *Inflammatory:* Viral, bacterial, and parasitic meningoencephalitis; brain abscess; postimmunization encephalitides; acute cerebellar ataxia; inclusion body encephalitis.

3. *Congenital and Developmental Malformations:* Sturge-Weber syndrome; mongolism; microcephaly; hydrocephalus; tuberous sclerosis; abnormalities of gyri and cerebral cortex.

4. *Metabolic and Degenerative Disorders:* Disease of cerebral white matter, (Schilder's disease, cerebral sclerosis of Krabbe, etc.); disease of cerebral grey matter (Tay-Sachs disease, Niemann-Pick disease); phenylpyruvic oligophrenia; thyroid disease.

5. *Intracranial Space-Occupying Mass:* Tumor; cyst.

Although the EEG in some of the above conditions may suggest specific etiologic factors, in most it will show a nonspecific response to cerebral damage. When the damage is moderate and diffuse, there is an initial slowing of frequency and increase in amplitude. If hyperventilation can be carried out, the response will likely be exaggerated with bursts of diffusely symmetrical, slower and higher waves. Progressively severe damage will be reflected by diffusely slower waves, 0.5 to 3 cps. with amplitude and frequency decreasing with increasing cerebral impairment, the recording becoming completely flat in patients with the most severe damage. Response of this type is obtained in widely diverse problems—as in acute head injury,[4,16] inflammatory meningoencephalitides,[18,19,22] in anoxia and poisonings—and is truly nonspecific. Patient recovery is attended by reversal of the above pattern, and if permanent damage has not occurred the normal EEG pattern for the chronological age will emerge.

In cases of permanent damage, persistent, slow waves and hyperventilation lability may be seen.

Certain conditions warrant further elaboration because of specific individual features. In infants with subdural hematoma or effusion the EEG is less helpful than in adults.[25,28] Various abnormalities have been described, such as focal 0.5 to 3 cps. waves or flattening over the affected side, generalized diffuse slowing, suppression of normal occipital alpha rhythm, and occasionally normal tracings.

Studies in cerebral palsy[1] indicate a correlation between abnormality of the EEG and seriousness of brain damage. Abnormal tracings were found by Perlstein and coworkers[23] in 90 per cent of a group of 212 such patients with accompanying convulsive seizures, and in only 44 per cent of those without seizures. They are most common in patients with spasticity and less common in those with ataxia or athetosis. The 4 to 6 year age group had the greatest number of abnormal EEG's, with spike waves in 77 per cent and petit mal discharges in 1 per cent.

Dawson's inclusion body encephalitis is a chronic, progressive illness, usually beginning in young childhood. The onset is insidious with gradual, progressive loss of intellectual achievements, increasing irritability, followed by increasing stupor, coma and death. EEG studies[7] demonstrate progressive disappearance of normal rhythms with appearance of episodes of high voltage, slow waves (1.5 to 3 cps.) which become periodic, approximately at 8-second intervals. These are interspersed with pronounced flattening of activity. Cobb and coworkers considered that order of encephalographic changes as characteristic of the disease, but Lesse and coworkers[18] described similar observations in encephalitis of other types, diffuse vascular disease (one patient) and congenital cerebral anomaly (one patient). One cannot then state this EEG complex is pathognomonic of Dawson's encephalitis, although its appearance strongly suggests this diagnosis.

Microcephaly has been associated with abnormal EEG's in 73 per cent of a study group[10] with direct relationship between clinical severity of disease and degree of EEG abnormality. Many kinds of electrical abnormalities were found but the most striking feature was presence of decreased amplitude in 63 per cent of cases. In hydrocephalus the EEG abnormalities are similarly varied, with flattening present in the more severe cases.[9]

Degenerative diseases of the cerebral cortex are characterized by early disruption of the normal rhythm[6,8] by slower waves. There is progressive disorganization with generalized runs of 2 cps. waves accompanied by irregularly appearing, nonfocal spike waves. Visible myoclonic jerks frequently accompany the EEG spikes.

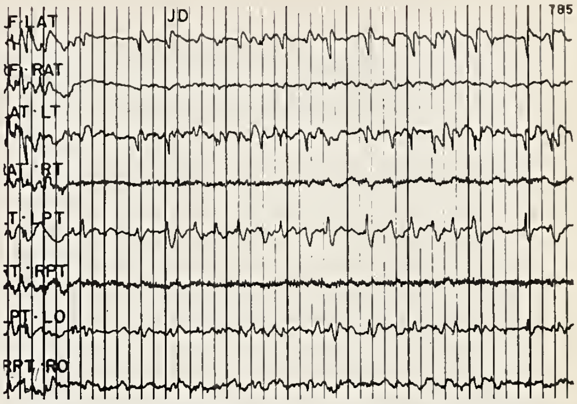

Figure 1.—Localized spike waves with phase reversal over left temporal area.

Space-occupying intracerebral masses may cause electrical abnormality.[3] Static, noninflammatory cysts or tumors near the cortex will usually cause some localized slowing, but if they be deep there may be no manifest EEG abnormality. Subtentorial tumors are more common in pediatrics and commonly cause bilaterally synchronous, high voltage slow waves with no focal or paroxysmal features.

Psychomotor or temporal lobe seizures are characterized by bizarre patterns of abnormal and inappropriate behavior.[21] These commonly occur as repetitious, semipurposeful movements, performed without the patient being conscious of the event. They may be of only a few seconds' duration, or may persist for hours. The termination of the seizure is usually marked by confusion and amnesia for the entire episode. The EEG concomitants may be quite variable. Gibbs emphasized the importance of spike foci over the anterior temporal area (Figure 1). The waking EEG is frequently normal, sleep being necessary to activate the electrical abnormality.

Infantile spasms are usually associated with a characteristic EEG pattern known as *Hypsarhythmia*.[5] Children with this condition frequently appear to develop normally until onset of seizures, usually during the first year of life. Mental impairment becomes evident with increasing frequency and severity of seizures. The spasms are characterized by a single or repetitive, flexion and adduction movement of limbs and body. Occasionally these may be extensor or a mixture of both movements. These seizures frequently disappear when the patient is about 3 years of age, but usually mental retardation persists. The EEG pattern is one of pronounced disorganization with high voltage slow waves and multiple spike foci (Figure 2). The bursts of abnormal waves are frequently followed by a short period of decreased electrical activity. Asynchrony and asymmetry are common findings.

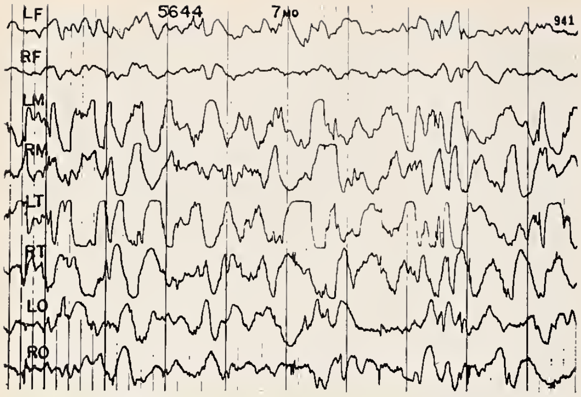

Figure 2.—Disorganization of normal rhythm with diffuse, asynchronous slow waves and spikes.

In some patients unusual, variable, paroxysmal symptoms—atypical epilepsy—replace overt convulsive movements.[21,30] Pain may be present in any portion of the body, most commonly referred to the head or abdomen. Dizziness or fainting also occur and must be differentiated from the same symptoms due to hypotension. Episodes of unrational rage, laughing or weeping are occasionally noted, as well as autonomic disturbances of sweating, flushing, vomiting and shivering. The most characteristic EEG feature is the appearance of 14 and 6 cps. positive spikes over one or both midtemporal areas. These are frequently only present in the sleeping EEG. Although this finding has been described in some patients with various psychiatric disturbances, including "behavior problems," it should not be construed that it will be present in the case of every nonconformist child.

IDIOPATHIC EPILEPSY

The group of conditions included under idiopathic epilepsy are characterized by specific clinical seizure patterns, absence of abnormal neurological findings, high familial incidence and lack of known etiological factors. In instances in which postmortem brain examination has been possible, no anatomic abnormality can be discerned. It is assumed a physiological cerebral defect is present. A brief correlation of clinical and EEG findings follows:

Generalized seizures have neither focal features nor focal aura although sensations of epigastric fullness or a "funny feeling" may be described. The EEG is not specific for this condition and may show a normal interseizure record, or there may be generalized bursts of abnormally fast or slow waves, spikes or sharp waves (Figure 3).

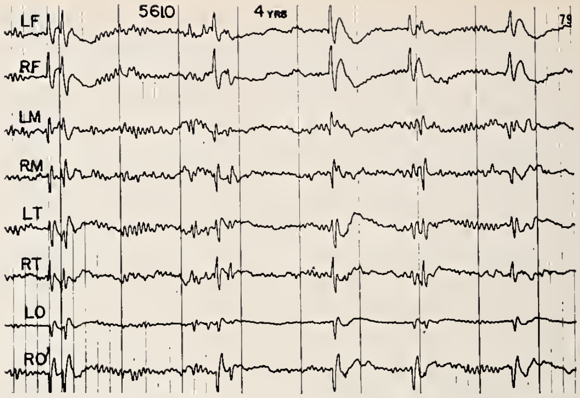

Figure 3.—Diffuse, repetitive spike waves, each followed by suppression of activity. This patient had mental retardation, but without clinical seizures.

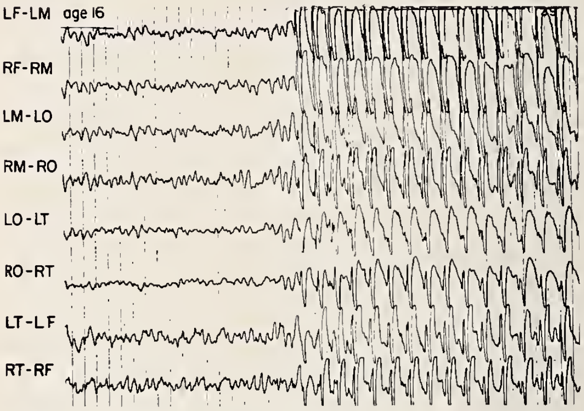

Figure 4.—Showing typical 3 cycles per second spike and slow wave complexes in petit mal, beginning mid-way of tracing.

Petit mal is very characteristic with an onset around 4 to 10 years of age, and with the lapses or staring spells of very brief duration. These usually disappear during adolescence. The EEG is characteristic[13]: Normal electrical activity is interrupted by generalized, bilaterally synchronous, 3 per second spike and wave complexes (Figure 4). Hyperventilation is a potent activator of this abnormality. Infrequently the staring spells may be accompanied by myoclonic jerks of muscle groups or the extremities. In these instances the EEG may show the same 3 per second spike and slow waves, but with accompanying multiple spikes.

FEBRILE CONVULSIONS

Febrile convulsions constitute a special problem of clinical management and prognosis. In addition to the clinical clues or short duration, generalized seizures developing only with fever, and a positive family history, the EEG will probably be normal in approximately 95 per cent of patients[17,20] who never develop afebrile convulsions. By contrast, a high percentage of patients with initial febrile convulsions, but with abnormal EEG's, will eventually develop afebrile convulsions.

REPORTING ON EEG EXAMINATION

The EEG report to the attending physician must be clear, succinct and interpretive, but must carefully avoid making a clinical diagnosis or prescribing therapy. If the tracing is sufficiently characteristic, the encephalographer should suggest that it is compatible with a certain kind of pathological process, but should avoid making a clinical diagnosis.

Prognosis of the disease may frequently be confidently outlined. For example, demonstration of the classical 3 per second spike and wave in a patient with lapse attacks suggests a probably excellent long-term outlook. Appearance of the disorganized pattern of hypsarhythmia reflects a very poor outlook for normal mental and motor development.

Evaluation of therapy is also a function of repeated electrical examinations. Disappearance of EEG abnormalities following therapy is good evidence of improvement but the decision regarding modification of therapy must be made by the clinician.

1820 Lincoln Avenue, Anaheim (Carson).

REFERENCES

1. Andersen, B.: The EEG findings and the problem of epilepsy in a cerebral palsy material of 320 patients, Acta Paediatrica, 44 (Suppl. 103) :22, July 1955.

2. Beckett, P. G. S., Bickford, R. G., and Keith, H. M.: The EEG and various aspects of mental deficiency, A.M.A. J. Dis. of Chil., 92(4) :374, Oct. 1956.

3. Burlo, G. M., and Danoff, S.: EEG in a case of cerebral vascular malformation, Electroencephalography and Clinical Neurophysiology, 9(4) :705, Nov. 1957.

4. Caveness, W. F.: EEG in head injury, Clin. Neurosurg., 2:116, 1954.

5. Chao, D. H., Druckman, R., and Kellaway, P.: Convulsive Disorders of Children, W. B. Saunders Co., 1958.

6. Cobb, W., Martin, F., and Pampliglione, O.: Cerebral lipoidosis, an EEG study, Brain, 75:343, 1952.

7. Cobb, W., Hill, D.: EEG in subacute progressive encephalitis, Brain, 73:392, 1950.

8. Crawley, J. W.: Three cases of juvenile form of amaurotic family idiocy with EEG findings, J. Pediatrics, 51(5) : 571, Nov. 1957.

9. Fois, A., Gibbs, E. L., and Gibbs, F. A.: Bilaterally independent sleep patterns in hydrocephalus, A.M.A. Arch. Neur. & Psych., 79(3) :264, March 1958.

10. Fois, A., and Rosenburg, C. M.: The EEG in microcephaly, Neurology, 7(10) :703, Oct. 1957.

11. Fois, A., Rosenburg, C., and Gibbs, F. A.: The EEG in phenylpyruvic oligophrenia, Electroencephalography and Clinical Neurophysiology, 7(4) :569, Nov. 1955.

12. Gibbs, F. A., and Gibbs, E. L.: Atlas of Electroencephalography, Vol. II, Epilepsy, Addison-Wesley Press Inc. Inc., 1950, Third Edition.

13. Gibbs, F. A., and Gibbs, E. L.: Atlas of Electroencephalography Vol. II, Epilepsy, Addison-Wesley Press Inc.

14. Harvold, B., and Hauge, M.: The EEG in patients with tuberous sclerosis, Electroencephalography and Clinical Neurophysiology, 7(4) :573, Nov. 1955.

15. Hill, D., and Parr, G.: Electroencephalography, MacDonald and Co. Ltd., 1950.

16. Kellaway, P.: The EEG in head injuries of children, Electroencephalography and Clinical Neurophysiology, 7(3) :495, Aug. 1955.

17. Lennox, M.: Febrile convulsions in childhood: Their relationship to adult epilepsy, J. Pediatrics, 35:527, 1954.

18. Lesse, S., Hoefer, P. F. A., and Austin, J. H.: Diffuse Encephalopathy Associated with Periodic Abnormal Discharges in EEG, Transactions of the American Neurological Assn., 81st Meeting, 74, 1956.

19. Levy, L. L., and Roseman, E.: EEG studies of encephalopathies, A.M.A. J. Dis. of Chil., 88(1) :5, 1954.

20. Livingston, S., Bridge, E. M., and Kajdi, L.: Febrile convulsions: A clinical study with special reference to heredity and prognosis, J. Pediatrics, 31:509, 1947.

21. Livingston, S.: The Diagnosis and Treatment of Convulsive Disorders in Children, Charles C. Thomas, 1954.

22. Paxson, E. M., and McKay Jr., R. J.: Neurologic symptoms associated with cat scratch fever disease, Pediatrics, 20(1) :13, July 1957.

23. Perlstein, M. A., Gibbs, E. L., and Gibbs, F. A.: The EEG in infantile cerebral palsy, Amer. J. Phys. Med., 34(4) : 477, Aug. 1955.

24. Pine, I., Aloynatan, T. H., and Margolis, G.: EEG findings in 18 patients with brain abscess, Electroencephalography and Clinical Neurophysiology, 4(2) :165, May 1952.

25. Rodin, E. A., Bickford, R. G., and Svien, H. J.: EEG findings associated with subdural hematoma, A.M.A. Arch. Neurol. and Psych., 69:743, 1953.

26. Skanse, B., and Nyman, G. E.: Thyrotoxicosis as a cause of cerebral dysrhythmia and convulsive seizures, Acta Endocrinologica, 22(3) :246, July 1956.

27. Silverman, D., and Groff, R. A.: The EEG of Supratentorial Tumors During Sleep, Transactions of the American Neurological Assn., 81st Meeting, 144, 1956.

28. Streifler, M., Freundlick, E., and Beller, A. J.: The EEG in subdural hematoma and effusion in children, A.M.A. J. Dis. of Child., 95(1) :25, 1958.

29. Turrell, R. C., Shaw, W., Schmidt, R. P., Levy, L. L., and Roseman, E.: Serial studies in tuberculous meningitis, Electroencephalography and Clinical Neurophysiology, 5:53, 1953.

30. Vahlquist, B., and Nylander, I.: Cyclic vomiting with recurring EEG changes and severe course, Acta Paediatrica Supplementum, 43(100) :608, 1954.

The Child Who Does Not Talk

EDWARD H. SENZ, *M.D.*, Berkeley

• The majority of normal children will have developed some speech by the age of two years. Significant delay in speech development may be the result of (1) deafness, (2) mental retardation, (3) faulty innervation of the speech organs, (4) aphasia, (5) autism, (6) a family trait, (7) hospitalism, (8) parental neurosis, or (9) some combination of these factors. Each nonspeaking child needs an individually planned study for precise diagnosis and recommendation for treatment.

THE FAILURE of a child to speak at the expected time will bring inquiries to the child's physician from the worried parents. It is not possible for all physicians to children to be experts in pathologic interference with speech, for it is a difficult and highly specialized subject. But since physicians will be the first consulted about a speech problem, they should know something of the normal patterns of speech development, the acceptable variations, what constitutes an important speech problem and the common causes of speech troubles.[3]

Human speech is an intricate function depending upon the integrity of various areas of the brain, the hearing apparatus, the organs of articulation and phonation and the intelligence; and it is affected by a great variety of psychological experiences. Speech does not arise abruptly, but follows a consistent pattern of development, no matter when it starts. Vocalization beyond crying normally begins in the early months of life, and by the end of the first year the infant makes a variety of sound combinations at various pitches, inflections and volumes, and is aware of the influence of this on others. During the same period the infant responds increasingly to language. By the end of the first year many children have acquired a few true words. From 12 to 18 months there may be little apparent progress in language development, but after 18 months language development should be rapid, and the period from two to four years is a critical one.

A child's speech may be deficient in quantity or in quality. The qualitative defects are the disorders of articulation and phonation. These frequently are functional in the same sense that many childhood problems of eating and elimination are functional. Problems of articulation may be due to organic disorders which, when more severe, limit the quantities of speech. For example, severe deafness of early onset prevents all speech; milder deafness may allow speech with faulty articulation. Anomalies of the speech organs proper, such as cleft palate, usually produce qualitative problems rather than quantitative ones.

In this presentation, discussion will be limited to the child whose speech is delayed in onset. Arbitrarily, it can be said that speech is delayed if it has not appeared by the age of two years. Most children make some sounds and complete mutism is rare, although it may occur in congenital deafness, idiocy, hysteria, schizophrenia and extreme negativism.

There are relatively few causes for delay in speech onset, and I will discuss the eight which are operative in the majority of cases.

1. *Deafness.* Severe deafness of early onset either prevents speech development or quickly abolishes what speech has been developed. A congenitally deaf child may make some of the babbling and cooing noises of infancy, but either stops this or does not progress from there. An alert and experienced mother will be aware of, and complain of, the baby's lack of response to speech and his failure to experiment vocally, so early diagnosis can be made. If the parent is inexperienced, early diagnosis will be made only if the physician in his routine care asks about vocalization and the child's response to voices. In this connection, intact hearing is not proved by a startle reflex, eye blinking, and head and eye turning in response to sound, since these are subcortical reflexes which appear even in the absence of cortical hearing. Excellent methods for training deaf children are available, and early diagnosis will prevent many problems that otherwise will arise.

2. *Mental Retardation.* Mental retardation is an important cause of delay in acquiring speech. Usually the delay in speech parallels the general retardation but frequently is greater than the rest of the retardation, and in my experience only rarely is speech ahead of the general development. Curiously, some mentally retarded children begin at 12 to 14 months to use a few words. They do so for several months and then stop talking, not to begin again un-

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From the Department of Medicine, Children's Hospital of the East Bay, Oakland, and the Department of Pediatrics, Highland-Alameda County Hospital, Oakland.

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til months or years later. No explanation for this is available.[1] Parents of mentally retarded children often find the delay in speech the most unbearable part of the retardation. They feel that if the child could talk, he would be able to make rapid progress in other areas. Therefore, they often insist on speech therapy. The physician can be of great help to the parents by explaining that speech development in their child is largely a maturational process that cannot be accelerated.

3. *Faulty Innervation of the Speech Organs.* This commonly occurs in conditions where there is bilateral damage to cerebral motor centers. The cerebral spastic exemplifies this. Here again, acquisition of speech is largely a matter of maturation. In these cases, other bulbar impairments usually are obvious.

4. *Aphasia.* The whole matter of aphasia is difficult and is subject to much disagreement. The term *aphasia* is applied to disorders of symbol formation or comprehension in the absence of mental deficiency, motor disturbance or special sense impairment. Presumably, damage of the highest centers is involved, but precise localization is not always possible. The terms *word deafness, impressive (or receptive) aphasia, auditory aphasia* and *sensory aphasia* refer to a specific inability to understand the spoken word. A child with auditory aphasia may develop a language of his own, termed *idioglossia* or *idiolalia.* The terms *expressive aphasia* or *motor aphasia* refer to an inability to create speech, or at least meaningful speech, even though comprehension of language is intact. Although the two entities may occur separately, there frequently is some combination of the two. Diagnosis of aphasia is notably difficult in early childhood because there are no certain landmarks. Contrary to statements found in textbooks, neurological examination, electroencephalography, behavior patterns, use or non-use of gestures, and psychologic tests do not infallibly identify the aphasic child. It is easily understood why these children are frequently regarded in turn as deaf, mentally retarded and emotionally disturbed. A valuable clue to the diagnosis of auditory aphasia comes when a presumably deaf child of good intelligence fails to make progress in a training program for deaf children.[4]

5. *Autism.* Since Kanner[2] described this condition in 1943, it has been recognized with increasing frequency. Autistic behavior occurs in association with a wide variety of organic and emotional disturbances. Primary autism, that is, autism without known cause, is symptomatic in earliest infancy. The infant is not cuddly, and it soon becomes apparent that he is unable to relate to people and situations in the ordinary way, but he does relate well to objects and is bright in appearance. The autistic child has "an obsessive desire for maintenance of sameness,"[2] and fiercely resists external forces to change him. One of the striking features of autism is mutism. When language does develop, it often fails to convey meaning to others. These children live in a world of their own, and others are not permitted to enter into it. Although it is not always possible to make a positive diagnosis easily, the condition need not be considered in a warm, friendly, affectionate child who relates well to his parents.

6. *A Family Trait.* It appears to be true that delayed onset of speech may occur as a family characteristic, especially in male members. In this situation, ultimate normality is the rule. One should be hesitant in accepting this as an explanation, since parents who are seeking a benign diagnosis may unconsciously misrepresent the family history, and this may lead to regrettable delay in establishing a correct diagnosis.

7. *Hospitalism.* Severe speech delay may occur in children who have spent a large part of their early lives in hospitals or institutions in connection with severe and prolonged illness, abandonment or being orphaned. The commendable trend of institutions toward providing stimulation for these unfortunate children should diminish the incidence. A similar problem arises in a home where the child is left alone and systematically ignored, aside from feeding.

8. *Parental Overprotection or Coercion.* There are some neurotic parents whose actions are such that the child is delayed in doing all things for himself, including communicating. There are two types of parents whose actions and attitudes will inhibit speech development in some children. The first are those parents who overprotect their children, who discourage independence and spontaneity in their children, and who do not permit their children to do anything for themselves. The second are those parents, usually highly successful in their occupations, who either wish their children to be prodigies or who cannot bear the long period of immaturity, and who therefore force, push and coerce their children to an impossible degree. Some children appear to shrink from coercive parents by "voluntary silence" or "elective mutism." In these situations, speech delay is only one of the problems, and often not the most significant. Since emotional problems in parents and child inevitably arise when speech is delayed due to any cause, one must be unusually careful not to ascribe causality to an emotional disturbance that may be a result of the speech delay.

Although it is not difficult to find uncomplicated examples of any of the conditions discussed, it is frequently true that multiple causes are present in any given case of speech retardation. Thus, a combination of mild mental deficiency and some deafness is common, giving more speech delay than could be accounted for by either alone. Similarly, a child with organic brain disease often has impairments of a variety of functions involved in speech.

What should be the approach of the physician when he is consulted about speech delay? The family physician or pediatrician may already have information about the child and the parents which will help him decide on a course of action. If one sees the child as a new patient, an exquisitely detailed history is necessary, including questions about the development and present state of the child's vocalization. Since the parents often are unable to describe the child and his speech accurately, it is risky to venture an opinion unless one has an opportunity to observe and hear the child. Observation of the child with his parents often will provide important clues to diagnosis. If the physician cannot decide whether or not a speech problem exists, referral to a speech pathologist is in order. The speech pathologist can determine whether or not a problem exists, and if one does exist he can tell something of its nature and he may be able to suggest some further investigations that are indicated.

Delay in acquisition of speech produces severe parental anxiety and frustration. The frustration is increased by the many incorrect diagnoses that are usually applied to the child. The physician should avoid hasty commitment to any diagnosis, avoid assigning the speech delay to trivial causes, and avoid bland reassurances. Each case needs detailed, individualized study. This study should include, as indicated, an appraisal of the general health, neurologic function, hearing, intelligence, integrity of the speech organs and the emotional climate in which the child lives and has lived. Such a study will permit specific diagnosis which will carry with it implications for treatment and prognosis. Often it may be necessary to study the child over a considerable period before a final diagnosis can be made. The child's response or lack of response to a treatment program—such as a class for the deaf or a special nursery school—may aid in the diagnostic formulation. Unfortunately, parents frequently withhold important information in the early stages of the investigation. The physician should advise the family that the necessary studies will be time-consuming, and he should be prepared to direct the family to the proper facilities and agencies. For an effective diagnostic study, coordination of the efforts of the various specialists is essential, and there must be free communication among the specialists.

2615 Ashby Avenue, Berkeley 5.

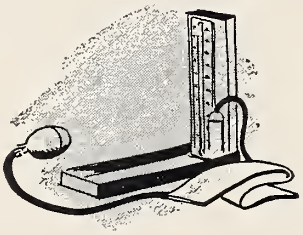
REFERENCES

1. Brown, S. F.: A note on speech retardation in mental deficiency, Pediatrics, 16:272-273, Aug. 1955.

2. Kanner, L.: Child Psychiatry, Third Ed., Charles C. Thomas, Springfield, Ill., 1957.

3. Lillywhite, H.: Doctor's manual of speech disorders, J.A.M.A., 167:850-858, June 14, 1958.

4. Monsees, E. K.: Aphasia and Deafness in Children—Some Aspects of Differential Diagnosis, Clin. Proc. of Children's Hospital of Washington, D. C., XV:269-276, Nov. 1959.



Diagnosis of Deafness in Preschool Children

GEORGE W. OLSON, *M.D.*, Fresno

• Hearing and speech disorders in children are often not due to actual defects in the ear or speech organs. Supposed loss of hearing and speech can occur in children who hear well but who cannot identify the words, understand their meaning or express them because of damage to certain brain centers and nerve pathways in conditions called aphasia, psychic disorders and mental deficiency.

The child uses his special senses (hearing, sight, touch, feel and smell) to establish contact with his environment and of these senses, hearing is most important because it helps to build the best avenue of communication with his immediate world.

As the deafened child can usually be helped by treatment, it is necessary to make a correct diagnosis early in order that the proper measures may be instituted in the first five years of life.

THERE ARE SEVERAL clinical entities that cause hearing and speech disorders in children, and the treatment differs for each. As the proper remedial treatment in the formative years can mean much for a child's social and economic future, it is a physician's duty to make a correct diagnosis early.

The terms *hearing* and *deafness* are used in their functional sense in this communication. This means that normal hearing consists not only of an auditory stimulus passing from the peripheral ear to the area 41 in the brain, but also of its transmission to higher perceptive and psychologic stations where the sound is put to its destined purpose. In these interpretive centers the sound is memorized and stored for future symbolic use and is then passed on in its proper context for expression by the motor center for speech. The term *deafness* refers to a decrease in hearing function which may vary from slight to a total loss.

Diagnosing deafness in a preschool child is fraught with difficulties, not the least of which is determining whether the deafness is due to an auditory cause, to brain damage or to psychologic aberration. Often the child cannot be examined satisfactorily by pure tone or speech audiometry, and the other formal diagnostic procedures such as peep show tests, electroencephalography and psychogalvanic skin reaction studies require equipment and personnel not usually available.[1,2,5,6] Most of these procedures have their greatest value in estimating quantitative loss of hearing rather than in helping to make a differential diagnosis. Without formal hearing tests, the examiner must rely on the history and a careful observation of the child's behavior in relation to his environment.

It is necessary to keep in mind the normal growth of a child with regard to his mental, physical, social and emotional development so that this standard may be compared with the behavioral characteristics of children with hearing disorders.[7] The normal-hearing baby can be informally tested by simple procedures and serial observations as to how he reacts to sounds, words and gestures.[9] Ten to 30 days after birth, a sharp tone near the baby will usually evoke an auropalpebral reflex. After approximately six weeks of life the baby will stop voluntary movements of head, arms and legs when he hears a fairly loud noise. At from two to four months of age, infants begin turning the head toward the source of sound. Somewhat later there will be cooing, laughing and smiling, and the cry and jargon will have definite tonal inflections. Still later there will be gradual assimilation of ability to integrate sounds and gestures—enough so that adults can interpret their meaning—and at the same time the infant becomes increasingly aware of his environment. Simple single words normally are uttered at from 12 to 14 months of age, and by the 18th to 22nd month the child should be using sentences. The chronological succession of events just noted in the development of the normal baby depends upon unimpeded passage of the auditory stimuli through the multiple brain centers dealing with memory, symbolization and expression.

In this development process, the auditory messages are also integrated with those from other special senses to form a scaffold for the construction of language. The building blocks for language are (1) perception, (2) assimilation and interpretation, and (3) expression in correct context of sounds, words and gestures.[8] When language function is delayed or hampered for any reason, the child will have difficulty in communicating with his environment; and as a consequence his mental, social and behavioral development will be retarded and changed.

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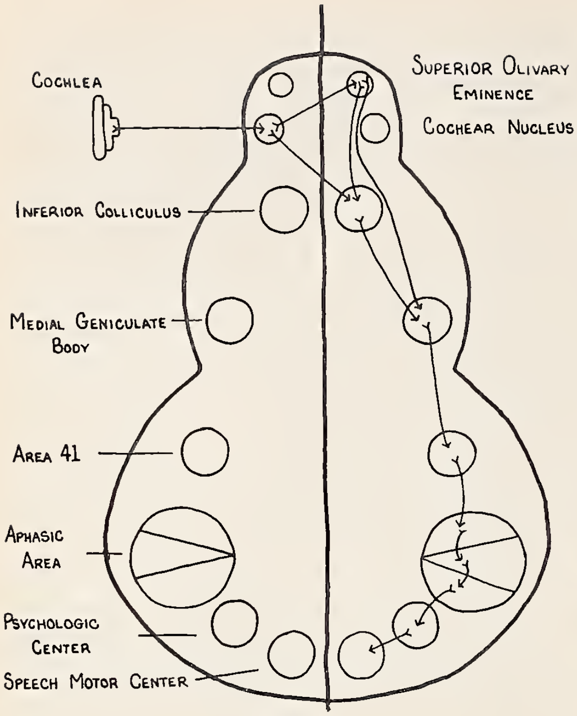


Figure 1

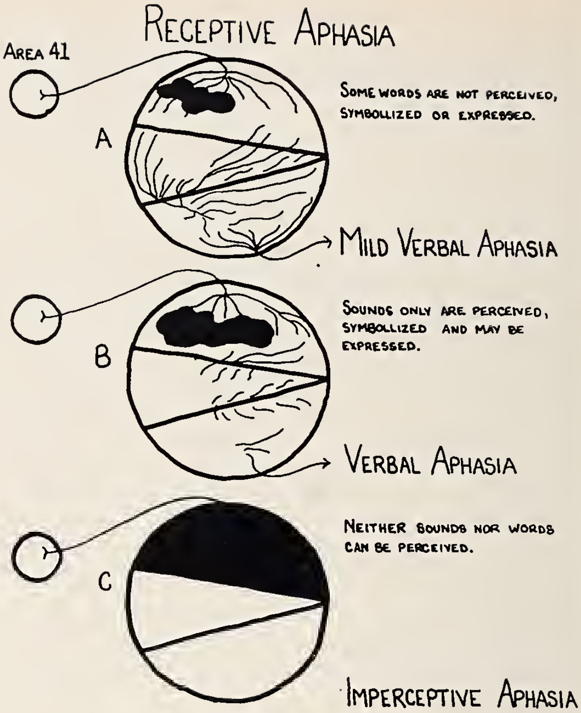

Receptive Aphasia
Area 41
A
Some words are not perceived, symbollized or expressed.
Mild Verbal Aphasia
B
Sounds only are perceived, symbollized and may be expressed.
Verbal Aphasia
C
Neither sounds nor words can be perceived.
Imperceptive Aphasia

Figure 2

It is known that lack of language may be caused by many clinical entities. The following conditions have been found to comprise the majority of the hearing and speech disorders in children:

Peripheral Deafness. The causes are well known and discussion here is unnecessary.

Intermediate Deafness. Deafness due to lesions in the auditory pathway from the cochlear nucleus to the contralateral area 41 in the temporal lobe has been termed *intermediate deafness* (see Figure 1). This pathway is known to be vulnerable to trauma, as in birth injuries, and to lesions produced by intravascular hemolysis in Rh factor incompatibilities.[3,4] It seems that a more specific localization of the site of disease can be expressed by the term *intermediate deafness* rather than *central deafness,* a prevalent term. Use of the term *central deafness* should be limited for those cases with bilateral lesions in the areas 41.

Aphasia is a language disorder resulting from brain damage and it is characterized by poor symbolic behavior and psychologic aberrations. It may be mild or severe and there are different patterns of behavior dependent on how localized or extensive be the brain deterioration. When the auditory stimulus reaches area 41 in the temporal lobe, it is then transmitted to higher centers in the brain for more definitive interpretation. Normally the stimulus is processed in a receiving station (perception), then sent on to an integration center for memory and thinking to himself (symbolization) and finally reaches the expressive center where words or symbols are gathered together and transmitted in the correct context to the motor center for speech. In discussing the several types of aphasia it will be of help to consider several schematic drawings (Figures 2, 3 and 4).

Receptive auditory aphasia occurs when brain damage involves the perceiving center for sounds and words. If the damaged area be small and localized (Figure 2A) there will be minor impairment. Should the deterioration be greater, no words would be perceived (Figure 2B). When the damage is still more extensive, neither words nor sounds could be understood (Figure 2C). This is classed as *imperceptive auditory aphasia.* Children with receptive aphasia are unable to form language because they are confused as to the meaning of the sounds and words that they hear. They cannot segregate and focus attention on the words and sounds which should be of immediate importance to them. This confusion results in the child's speaking seldom, not using his voice purposefully, having a meaningless jargon and responding sluggishly to other sensory stimuli. Their social development is characterized by their inadequacy in playing with others and a lack of enthusiasm for the world in general, being neither shy nor aggressive. These children are easily distracted, are uninhibited and often persist in doing meaningless acts over and over. Motor development is usually retarded and their coordination is poor.

Central auditory aphasia is produced when brain damage involves the central areas as shown in Figure 3A. Clinically a pure central aphasia is seldom found because the brain damage usually extends to the areas A and B. If brain deterioration is extensive in the central area, the characteristics of both receptive and expressive aphasia are found: The child fails to symbolize the words and sounds he has perceived, and as a result he is unable to think to himself. This acts as a severe retardant to development of language and as a group the children with this condition are the most retarded in social, behavioral and mental growth.

Expressive auditory aphasia occurs when a lesion damages the area shown in Figure 3B. The child is able to perceive and to symbolize internally but is unable to express the words in their correct context. As a group, children with such damage have milder emotional and social deviations from normal than the other aphasias because they are able to understand speech and to think to themselves, and are only handicapped by the inability to communicate by voice.

Psychogenic deafness is thought to be due to a defect in the brain area dealing with communications between the child and his environment. This region has not been localized anatomically but it is thought to be near the other cerebral centers (Figure 4). Because of emotional disturbances between the child's inner needs and the demands of his world, an impasse may develop in which he is unable to satisfy either. The children in this group have decided to give up their environment. The sense of hearing seems to be the more common link in communication with his environment to be abandoned, although visual stimuli may also be ignored. With the relinquishment of the sense of hearing the child becomes severely handicapped because of poor language foundation. Psychic deafness is thought to be generally defensive in nature and it is now recognized that a feeling of insecurity may be engendered by a lack of love and too frequent admonitions and punishments—the latter being significantly associated with the spoken voice. The auditory stimulus moves normally through the peripheral tracts to the higher cerebral centers where perception, internalization and expression are integrated. There is normal perception, internalization and the knowledge of how to express words. However, when the relay passes into the psychologic center the message is halted and does not go through to the motor center for the speech organs. This results in the suppression of speech which in turn causes deterioration in the child's general behavior with relation to his environment.

Infantile autism is known as a form of schizophrenia which develops in early infancy. Because of the psychic block, functional hearing and speech are not acquired and the baby's maturational growth is retarded. These children respond poorly to formal hearing tests and are often classed as being peripherally deaf. It has been noted that a large number of these babies are emotionally starved from lack of love and understanding. Unless the psychic barrier be removed, the child will never talk.

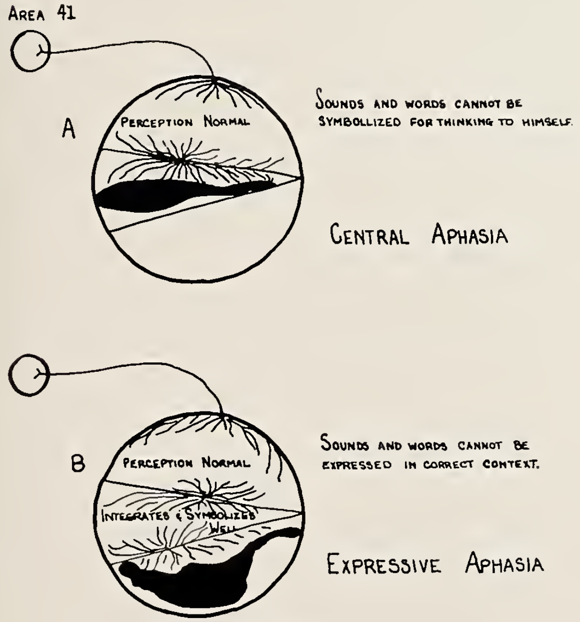

AREA 41
A
PERCEPTION NORMAL
SOUNDS AND WORDS CANNOT BE SYMBOLLIZED FOR THINKING TO HIMSELF.
CENTRAL APHASIA
B
PERCEPTION NORMAL
INTEGRATES & SYMBOLIZES WELL
SOUNDS AND WORDS CANNOT BE EXPRESSED IN CORRECT CONTEXT.
EXPRESSIVE APHASIA

Figure 3

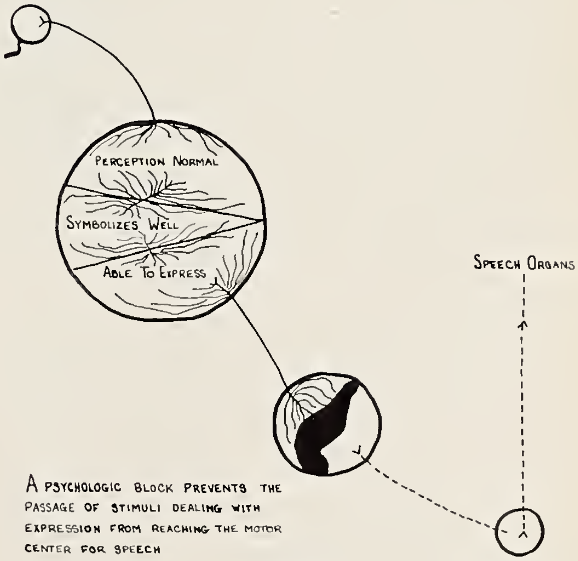

PERCEPTION NORMAL
SYMBOLIZES WELL
ABLE TO EXPRESS
SPEECH ORGANS
A PSYCHOLOGIC BLOCK PREVENTS THE PASSAGE OF STIMULI DEALING WITH EXPRESSION FROM REACHING THE MOTOR CENTER FOR SPEECH

Figure 4

CHART 1.—*Points to Cover in History-Taking for Diagnosis of Childhood Deafness*

PRENATAL:

German measles?
Miscarriages, abortions or stillbirths?
Unusual drugs during pregnancy?
Accidents during pregnancy?
Sickness during pregnancy?
Length of pregnancy?

NATAL:

Did labor begin normally or were drugs given?
Was it difficult or long labor?
Were forceps used?
Was anesthesia given?

POSTNATAL:

Was baby's skin yellow?
Was baby's skin blue?
Did baby have trouble nursing?
What sicknesses has baby had?
Has baby had high fevers? How high?
Has baby had convulsions?
Has baby had skull injuries? Been "knocked out"?
What medicines has baby had?

FAMILY HISTORY:

Any deafness in either mother's or father's family?
Any deafness or no talking in baby's brothers or sisters?
Any convulsions in family?
Any mental disease in family?

BABY'S GROWTH:

1. When did baby first "hear" anything?
2. When did baby sit up alone?
3. When did baby creep?
4. When did baby stand alone?
5. When did baby walk?
6. When did child first talk?
7. Does child walk and run well?
8. Is child more awkward than other children?
9. When did child use sentences?
10. When was child toilet trained?
11. Does child play well with other children?

Schizophrenia usually is manifested after a year and a half to two years of age. Up to this point the child develops fairly normally in most respects and speech has been acquired before the psychic block occurred. In most cases one can elicit a history of pronounced fear of sounds from infancy. The child seems withdrawn from reality and exhibits bizarre relations with his environment. Even though he rejects sounds objectively, he does use them subjectively for his own amusement in phantasy form. It is characteristic that these children are the most mute of all, yet their motor development is nearly normal.

Obsession and anxiety neuroses are conditions in which hearing is relinquished only for certain situations. Generally speaking, children with psychic disorders of hearing will talk less, use and respond to gestures less and react to other stimuli less than will those with the other hearing disorders.

Mental deficiency may be confused with peripheral deafness, especially in children having an intelligence quotient from 45 to 65. In the case of lower intelligence quotient the motor, physical and behavioral characteristics are such that mental retardation is suspected and the apparent hearing loss can be accounted for. Many of these children in the 45 to 65 intelligence quotient bracket are being treated for auditory deafness. If their general inadequacy in most situations is recognized, then their slow speech development can be predicted. If the intelligence quotient is 50, then the child will have a mental age of one when he is two years old and his speech formation and other phases of development will take twice as long as the normal child.

CHART 2.—*Occurrence of Various Phenomena in Several Categories of Childhood Deafness*

Phenomenon	Peripheral Deafness	Aphasic Deafness	Psychic Deafness	Mental Deficiency
Hears loud sounds usually	X	....	....	X
Hears loud sounds now and then	....	X	X	....
Hears sounds but not speech	....	....	X	....
Doesn't want to hear	....	....	X	....
Afraid of loud sounds	....	....	X	....
Confused by words and sounds	....	X	....	X
Uses what hearing he has to his advantage	X	....	....	X
Doesn't use hearing to his advantage	....	X	X	....
Listens well	X	....	....	....
Listens poorly	....	X	X	....
Does he talk some?	X	X	....	X
No speech	....	....	X	....
Talked and then stopped talking?	X	....	X	....
Talking delayed after 2 years	....	....	....	X
Uses voice to call people or make them notice him	X	....	....	X
Voice tones are normal tones	....	X	X	X
Voice tones are not normal tones	X	....	....	....
Voice used in playing	....	X	....	X
Voice not used in playing	X	....	X	....
Uses and understands gestures and facial expressions	X	....	....	X
Doesn't use or understand gestures	....	X	X	....
Does he use eyes well and sense of touch?	X	....	....	....
Poor use of eyes and sense of touch	....	X	X	X
Sit, creep, walk, run, etc., normal	X	....	X	....
Awkward or poor movements	....	X	....	X
Is active and accomplishes things	X	....	....	....
Is active and doesn't accomplish much	....	X	....	X
Shuffles and balance is unsteady	X	....	....	....
Coordination is good	X	....	X	....
Coordination poor	....	X	....	X
Laugh and cry have "flat" tones	X	....	....	....
Laughs and cries without reason	....	....	X	....
Doesn't laugh or cry very loud or easily	X	X	....	X
Laugh and smile to themselves only	....	....	X	....
Does things over and over again	....	X	....	....
Doesn't do anything for very long	....	X	....	....
Easily disturbed	....	X	....	....
Likes people around him	X	....	....	X
Doesn't care if people are around	....	X	X	....
Temper tantrums	....	X	X	....
Dislikes loving and cuddling	....	....	X	....
Doesn't play well with other children	....	X	....	....
Gets along well with people	X	....	....	X
Doesn't care for other people	....	X	X	....

(X) Indicates Conditions in Which Abnormality Occurs

Other conditions resulting in impaired speech are *dysarthria* and *anarthria*. The site of pathologic change is the motor speech center and therefore the speech impairment is from motor deprivation rather than sensory loss as in aphasia. The speech center lesion is caused by brain deterioration which often is associated with aphasia, mental deficiency and birth injuries. In addition to the speech impairment there is a dysfunction of chewing and swallowing, these being allied functions of the speech muscles. This deglutitory deficiency serves to differentiate dysarthria from expressive auditory aphasia, which has no motor disturbance.

It is of considerable help in the taking of a history and in the observation of the child's behavior to have a planned approach. Use of the forms shown in Charts 1 and 2 has proven of value in avoiding the possibility of failing to ask necessary leading questions. When the results are tabulated a clearer insight often can be gained and further definitive questions can be asked to aid in making a correct differential diagnosis.

1759 Fulton Street, Fresno 21 (Olson).

REFERENCES

1. Bordley, J. E., and Hardy, W. J.: A study in objective audiometry with use of psychogalvanometric response, Ann. Otol., Rhin. & Laryng., 58:751-760, Sept. 1949.

2. Dix, M. R., and Hallpike, C. S.: The peep show: A new technique for pure tone audiometry in young children, Brit. J. F., 2:719, Nov. 8, 1947.

3. Dublin, W. B.: The neurologic lesion of erythroblastosis fetalis in relation to nuclear deafness, Am. J. Clin. Path., 21:935-939, Oct. 1951.

4. Goodhill, V.: The nerve deaf child: Significance of Rh, maternal rubella and other etiologic factors, Ann. Otol., Rhin. & Laryng., 59:1123-1147, Dec. 1950.

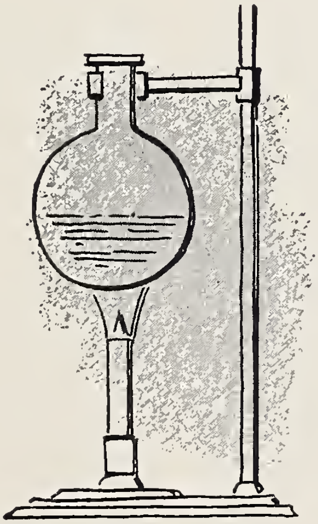
5. Guilford, F. R., and Haug, C. O.: Diagnosis of deafness in the very young child, Arch. Otol., 55:101-106, Feb. 1952.

6. Marcus, R. E., Gibbs, E. L., and Gibbs, F. A.: Electroencephalography in the diagnosis of hearing loss in the very young child, Dis. Nerv. System, 10:170, June 1949.

7. Myklebust, H. R.: Auditory Disorders in Children, Grune & Stratton, Inc., New York City, 1954.

8. Myklebust, H. R.: Changing concepts in audiology, Laryng., 66:437-444, April 1956.

9. Wishart, D. E. S.: The hard of hearing infant, Ann. Otol., Rhin. & Laryng., 63:378-393, June 1954.



The Language-Handicapped Child

Coordinated Evaluation by Physicians and Educators

**W. J. WEDELL, *M.D.*, E. A. LOWN, *M.A.*,
and RUSS CONNOR, *M.A.*, San Francisco**

• **Seventy children were studied during 1959 in a special school program because of major language problems. A team of medical and educational personnel studied each child during a ten-day school enrollment. The results of the medical and educational studies were of great value in establishing the correct diagnosis and devising a suitable educational program for the children.**

Since september 1946, the School for Cerebral Palsied Children, Northern California, has been operating as a part of the Bureau of Special Education of the California State Department of Education. During its first ten years of operation, several members of the staff had the opportunity to study and deal with the various speech and language problems of the cerebral palsied children. In the early years of the School program, most children were admitted because of the extent or degree of their physical handicap and it was felt that an intensive program for a few months would significantly accelerate their physical or educational habilitation.

In the past few years numerous excellent classroom programs for children with cerebral palsy and other similar handicaps have been developed throughout the state. There are currently 56 special programs, which are operated by the local school districts, for approximately 3,000 children. Although these new programs are doing a very commendable job, they often seek help, especially for the children with mild physical problems but with major problems relating to speech, language and learning. The children who also have multiple handicaps involving vision and hearing require special studies and care.

In response to many requests for help with complicated language problems, the School started a pilot project of speech and language disorders in September 1956. The children with language problems were enrolled in one of the classrooms and, after the initial diagnostic studies, selected children were enrolled for extended training in speech and language. In the following two years, 93 children were studied and special recommendations were made.

In January 1959, the Residence School was approved as a center for the diagnosis of neurologically handicapped children under the Crippled Children Services of the State Department of Public Health. During the year 1959, seventy additional children were studied at the School because of neurological and language problems. This communication is a review of the current method of operation of the language program and some of the medical and educational problems presented by the language-handicapped child.

Philosophy of a Medical-Educational Team

In the diagnosis and treatment of language disorders in children, it is obvious that a multiprofessional approach is advisable. The different hearing, speech and language centers throughout the country have widely different standards for the diagnostic team, particularly for the medical aspects of the problem. In some language centers, only one physician is on the team while other centers may have two or three physicians see the children. In our program, the early medical team consisted of a pediatrician and a neurologist. It soon became evident that additional medical evaluation was necessary for almost every child with a significant language problem. Consequently, an ophthalmologist, an otolaryngologist and a child psychiatrist were added to complete the medical team. The educational members of the team consist of a qualified audiologist and speech therapist, a psychologist, a medical social worker and a teacher experienced in elementary school education as well as in special education. Our experience with children with language handicaps indicates that an integrated medical and educational diagnostic study is essential in order to establish the likely diagnosis and to make an intelligent and realistic recommendation for the child.

From the Diagnostic Center for Neurologically Handicapped Children, Bureau of Crippled Children Services of the California State Department of Public Health and the Medical-Educational Diagnostic Center, School for Cerebral Palsied Children, Northern California, San Francisco 27.

Neurological Consultant and Coordinator. Associate Research Neurologist, University of California School of Medicine (Wedell); Superintendent, School for Cerebral Palsied Children, Northern California, San Francisco 27 (Lown).

Presented before the Section on Psychiatry and Neurology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Method of Study

The children with major language problems were first evaluated by their local physician or pediatrician. Those whose primary problem seemed to be mental retardation or epilepsy were not accepted for extensive study. The children whose language disorder seemed referable to a neurological disorder were subsequently enrolled in the School for Cerebral Palsied Children for more complete evaluation. Previous medical studies and hospital reports were obtained whenever possible to avoid reduplication of studies. The evaluation of the medical and educational problems is conducted during a two-week period of school enrollment. During the first week, the child is in the classroom except for the time involved in the various medical examinations and laboratory tests. During the second week, the additional studies regarding education, psychology and language are completed. After ten days, a staff conference reviews the pertinent medical and educational findings with representatives of the local health and educational facilities as well as with the parents. The goal is to find the most appropriate program for the child for the forseeable future of one to two years.

Results

The 70 children dealt with during the past year had the most extensive studies and will therefore be reported upon. In the previous group of 93 children, however, although the clinical observations were the same, some of the special consultations and laboratory tests such as x-ray or electroencephalographic examinations were not done.

Source of Referrals

Only two of the children examined were from San Francisco since the School's facilities are primarily for children from smaller communities where extensive medical facilities are lacking. Most of the children were from the eight counties surrounding San Francisco Bay, although several children were from the smaller communities in the San Joaquin and Sacramento valleys.

The children ranged in age from 3½ to 15 years. Thirty-nine of them were from 3½ to 6, 22 from 6½ to 9, and 9 children from 9½ to 15 years of age. The children in the youngest group were referred primarily through medical channels, the oldest group primarily through educational channels. The numbers of children of various ages are shown in Table 1.

Neurological Findings

Although the children were seen primarily for language problems, three of the children had very gross neurological impairment such as hemiplegia or spastic paraplegia. Nine of the children also had mild but obvious neurological involvement of the neuromuscular system such as mild hemiplegia. The most interesting finding in the children was not the obvious gross neurological deficit but the nonspecific awkward and clumsy coordination problem which was evident in the hands as well as in the lower extremities.

TABLE 1.—*Number of Children of Various Age Groups in Present Study*

Age (Years)	No.	Age (Years)	No.	Age (Years)	No.
3½	3	6½	5	9½	1
4	4	7	4	10	0
4½	7	7½	3	10½	2
5	5	8	4	11	1
5½	11	8½	1	11½	0
6	9	9	5	12	0
	—		—	12½	1
	39		22	13	0
				13½	2
				14	1
				14½	0
				15	1
					—
					9

Neurological examination of the cranial nerves was at times difficult in these children with little or no speech, and they were at times uncooperative. Simple modifications of the routine examination would often give extremely valuable information. Visual acuity could be adequately evaluated by the use of various sizes of colored candy beads. These varied in size from 1 mm. up to the larger pieces—discs about 1 cm. in diameter. The sight of the candy quickly activated the eye-hand-mouth pattern which gave the opportunity to also evaluate ataxia and other coordination problems. The use of small finger puppets was most satisfactory in evaluating visual field defects or hemianopsias. Evaluating the degree of dysarthria was difficult in the children, particularly in the youngest group. In the older children, articulation could be more adequately evaluated with the longer words, connected speech and finally test phrases for articulatory disorders. Observation of the child for drooling, for tongue control and for ability to lateralize the tongue also gave information regarding speech.

The motor system in the children without gross neurological findings was extremely interesting. The parents, school teachers and other observers almost invariably noted the awkward, clumsy problem regarding the fingers. These findings were very evident with the handwork in the School program even as low as the nursery school level. It was more evident in the kindergarten and first grade hand activities. The finger coordination problem could be demonstrated and the evidence reinforced by the standard tests of performing finger-to-finger coordination. The lower extremities could best be evaluated not only by watching the gait but by having the child run. It was also of interest to observe the child climbing and descending a flight of stairs and the large number that still required the hand railing for support or would not alternate their feet in the usual manner.

In most of the children pathological reflexes were demonstrated. There was often a gross inequality of the reflexes. A very high number of children obviously had a positive Babinski reflex. A surprisingly large number also had grasping reflexes or positive Wartenberg reflexes in the upper extremities.

Sensory examination was sometimes difficult in the children, particularly the young group. However, often one hand was larger than the other, with a problem of astereognosis involving the small hand.

The consulting ophthalmologist examined 52 children. Significant abnormalities other than refractive errors were present in 18 of them. Extensive hearing studies were done in all children. One was deaf, with a hearing loss so severe that he was not expected to develop language even with amplification. Nine of the children had significant hearing losses but could hear adequately with the use of amplification.

Electroencephalographic studies were performed on 60 children. There were 33 obviously abnormal records, most of them indicating generalized paroxysmal dysrhythmia. Several of the records also showed focal disorders. Four of the 60 children were so uncooperative that records could not be obtained in spite of the use of medication.

Other laboratory studies which gave significant information included x-ray films of the wrist for bone development, which revealed major retardation in five children. One of the children had clinical manifestations of phenylketonuria, which was confirmed by urine and blood studies for phenylalanine.

Psychological studies were done on all children. A battery of studies was performed, including the Wechsler Intelligence Scale for Children, Columbia Mental Maturity Scale and the Ammons Full Range Picture Vocabulary Test. Other studies were the Goodenough Draw-A-Man, the Ravens Progressive Matrices and the Bender-Gestalt. The range in mental ability is shown in Table 2.

All children and at least one parent were seen by the child psychiatrist. Most of the children had problems of behavior, as well as of speech and language, and had aroused considerable anxiety, confusion and uncertainty in the parents. The psychiatrist was helpful in differentiating the primary emotional problems from those that were secondary to the organic clinical condition. Of the 70 children, it was felt that only 3 or 4 had severe primary emotional problems.

TABLE 2.—*Mental Ability of Children in Present Study**

Total number studies		70
Very superior	0	
Superior	1	
Bright normal	4	
Average	9	
Dull normal	12	
Borderline	12	
Below borderline	32	
Total number diagnosed as having an aphasic problem		28
Expressive type	4	
Receptive type	0	
Mixed	23	
Undetermined	1	

*Made on basis of Wechsler Intelligence Scale for Children ratings.

Recommendations

After the diagnostic studies were completed, recommendations were made depending upon the age of the child and the entire clinical picture. Several children were referred to special classes for children with hearing problems where special help was available. A considerable number were in classes for slow learners or for the mildly retarded. A few of the children continued in regular classroom programs with additional help and speech therapy. Six of the children were able to attend a special class for language-handicapped children which was activated in September 1959 in the Berkeley school system.

Department of Neurology, University of California Medical Center, San Francisco 22 (Wedell).

REFERENCES

1. Bender, L.: Psychopathology of Children with Organic Brain Disorders, Chas. C. Thomas, Springfield, Ill., 1956.

2. Cohen, P.: Aphasia in kernicterus, J. Speech and Hearing Disorders, 21:411, 1956.

3. Diamond, S.: Ocular evaluation of the cerebral palsied child, Amer. J. Ophth., 48:721, 1959.

4. Hardy, W. G., Barley, J. E., and Pauls, M. D.: Hearing disorders—Symposium on hearing, speech and reading difficulties in children, Pediat., 12:81, 1953.

5. Karlin, I. W.: Aphasias in children, A.M.A. Amer. J. Dis. Child., 87:752, June 1954.

6. Laufer, M. W., and Denhoff, E.: Hyperkinetic behavior syndrome in children, J. Pediat., 50:463, 1957.

7. Myklebust, H. R.: Auditory Disorders in Children, Grune and Stratton, 1954.

8. Orton, S. T.: Reading, Writing and Speech Problems in Children, Norton, New York, 1937.

9. Strauss, A., and Lehtinen, L.: Psychopathology and Education of the Brain Injured Child, Grune and Stratton, New York, 1947.

10. Wartenberg, R.: Diagnostic Tests in Neurology, Year Book Publishers, 1953.

11. Wepman, J. M.: Recovery from Aphasia, Ronald Press, 1951.

12. Wood, N. E.: Causal factors of delayed speech and language development, Amer. J. Mental Deficiency, 61:4, April 1957.

CASE REPORTS

Isolated Paralysis of Serratus Anterior Due to an Electrical Injury

LEONARD MARMOR, M.D., and
CHARLES O. BECHTOL, M.D., Los Angeles

THERE HAVE BEEN about 250 cases of isolated paralysis of the serratus anterior muscle reported since the first description in 1837 by Velpeau. Johnson and Kendall[1] said that 35 of the 111 cases reported since 1925 were attributed to acute trauma, 16 to recurrent trauma, 13 to postinfectious conditions, 13 to cold, eight to injections, seven to postoperative complications, and six were postpartum. In 13 cases the cause was not determined. There has been no report of nerve paralysis due to an electrical injury.

The nerve to the anterior serratus arises from the anterior spinal branches of cervical roots 5, 6 and 7, and traverses the axilla beneath the brachial plexus to the lateral aspect of the chest wall. It is difficult to understand the frequent selective injury to this nerve.

In the case here reported, there was selective paralysis of the long thoracic nerve to the serratus anterior, secondary to an electrical injury.

REPORT OF A CASE

A 50-year-old carpenter was injured at work on October 24, 1958, when he was unable to release his grip on an electric drill that short-circuited while he was holding it in his right hand and 110 volts of electricity passed through his arm for about 30 to 60 seconds. Immediately after the injury the patient was unable to raise his arm to wash his face. Shortly thereafter pain developed in his shoulder, and his hand began to swell. Several months of physiotherapy to restore the strength of the right arm was futile. The arm tired very rapidly and the patient could not hold it above his head without great difficulty and weakness.

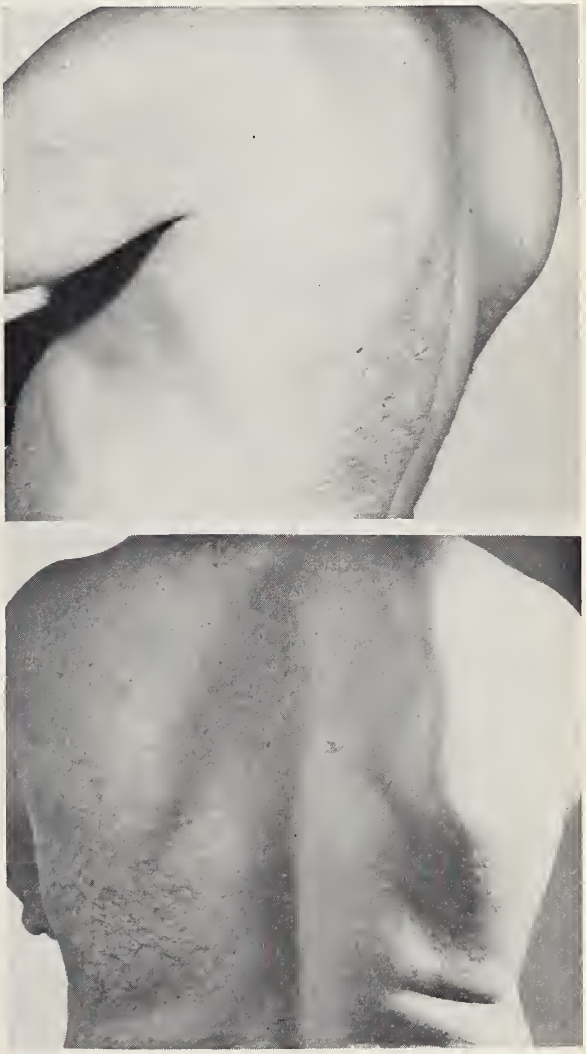


Figure 1.—Winging of right scapula in a case of paralysis of the serratus anterior.

Upon examination, decided "winging" of the right scapula was observed and the appearance was suggestive of atrophy of the infra and supra spinatus muscles (Figure 1). The range of shoulder motion was not restricted. Loss of sensitivity to pin-prick and to light touch was noted in the arm. Roentgenograms of the shoulder girdle were within normal limits. An electromyogram showed fibrillation indicative of denervation involving only the serratus anterior muscle. The patient had difficulty lifting a one-pound weight through the active range of motion. There was no return of muscle function in

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From the Department of Surgery, Division of Orthopedic Surgery, University of California Medical Center, Los Angeles 24.

Submitted July 26, 1960.

the succeeding nine months and the patient continued to be disabled for manual labor.

SUMMARY

Isolated paralysis of the serratus anterior muscle occurred in a patient following electrical shock from a 110-volt drill he was holding in his right hand and could not release when the current passed through his body.

Department of Surgery, UCLA Medical Center, Los Angeles 24 (Marmor).

REFERENCE

1. Johnson, J. T. M., and Kendall, H. O.: Isolated paralysis of serratus anterior muscle, J. Bone & Joint Surg., 37-A:567-574, June 1955.

A Perineo-Abdominal Approach for Resection of a Presacral Tumor

NORMAN M. SHAPIRO, M.D.,
LEONARD D. ROSENMAN, M.D., and
LEWIS SPECKER, M.D., San Francisco

THIS CLINICAL REPORT will illustrate and discuss two aspects of the treatment of a tumor in the presacral region: (1) A combined perineal and abdominal operation exposed most of the tumor and allowed the surgeon to resect it with its investing condensations of soft tissue, all the while maintaining precise hemostasis. (2) In this patient, resection of the right third, fourth, and fifth, and the left fourth and fifth sacral nerves caused no defects of reproductive function, micturition or defecation.

Adequate data and discussion concerning the incidence, the distribution and the histopathologic features of presacral tumors are already a part of the literature.[3,6,8] Several investigators reported successful resections by perineal and transsacral routes.[1,4,7] However, the combined abdominoperineal operation[2] has received much less attention. In the present case the tumor arose in the sacral neural canal and extended anteriorly to form a large mass behind and alongside the rectum. The tumor was supplied by several large arteries and drained by large veins belonging to the internal iliac system, which entered the mass on its cephalic and ventral surfaces. We feared that a resection attempted through a perineal route alone would cause hemorrhage difficult to control. On the other hand, an abdominal operation alone would not have permitted resection of that portion of the sacrum which was invaded by the tumor. In the combined perineo-abdominal operation, the surgeon exposed and removed as much of the sacrum as he considered necessary to rid it of tumor before he delivered the tumor into the presacral space. Then he removed the mass by careful abdominal dissection of all of its surfaces rather than by enucleating it from within its own outer layers.

Neuro-anatomic evidence suggests that sacrifice of certain segments of the pudendal plexus, formed by the anterior branches of the first through the fifth sacral nerves, will lead to loss of visceromotor functions. The visceral branches lie more in the third and fourth than in the second segments, and they include visceral afferent and preganglionic—that is, parasympathetic efferent—fibers. They participate with fibers from the hypogastric plexus and with visceral branches of the sacral chain ganglia in the formation of the pelvic plexus which distributes to the various pelvic organs. However, MacCarty and coworkers[6] and Mixter and Mixter[5] showed that, contrary to the fears of the anatomists, resection of the third, fourth and fifth sacral nerves bilaterally led to no observable dysfunction. Our experience corroborates that report.

REPORT OF A CASE

The patient, a 28-year-old white man, had no symptoms referable to the tumor. He fell while at work and sought medical attention because he had pain in the back. A defect in the sacrum was noted in roentgenograms taken to determine the presence or absence of fractures (Figure 1). Upon examination a large, round, nontender, rubbery-firm mass was felt through the rectum in the presacral region. For biopsy, the tumor was exposed through a small

Figure 1

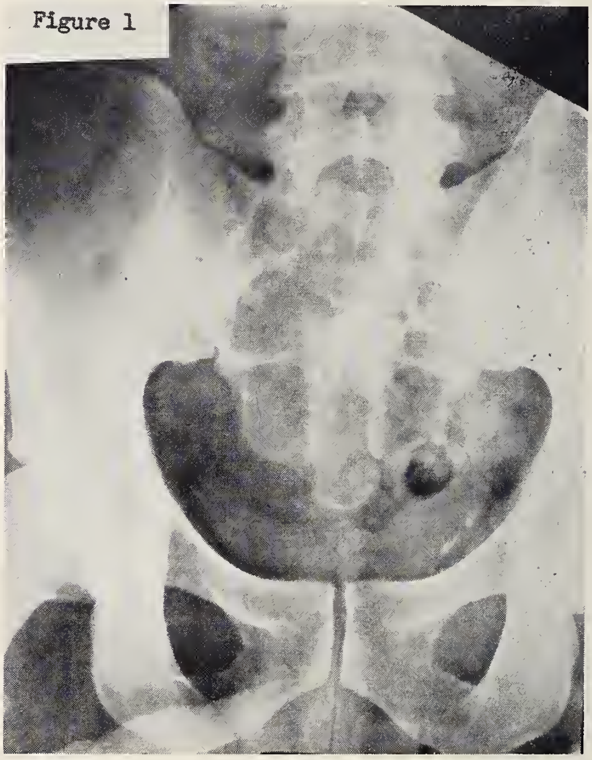


Figure 1.—Preoperative roentgenogram showing destruction of sacrum.

From the Departments of General and Orthopedic Surgery, Mount Zion Hospital and Medical Center, San Francisco.
Submitted January 4, 1961.

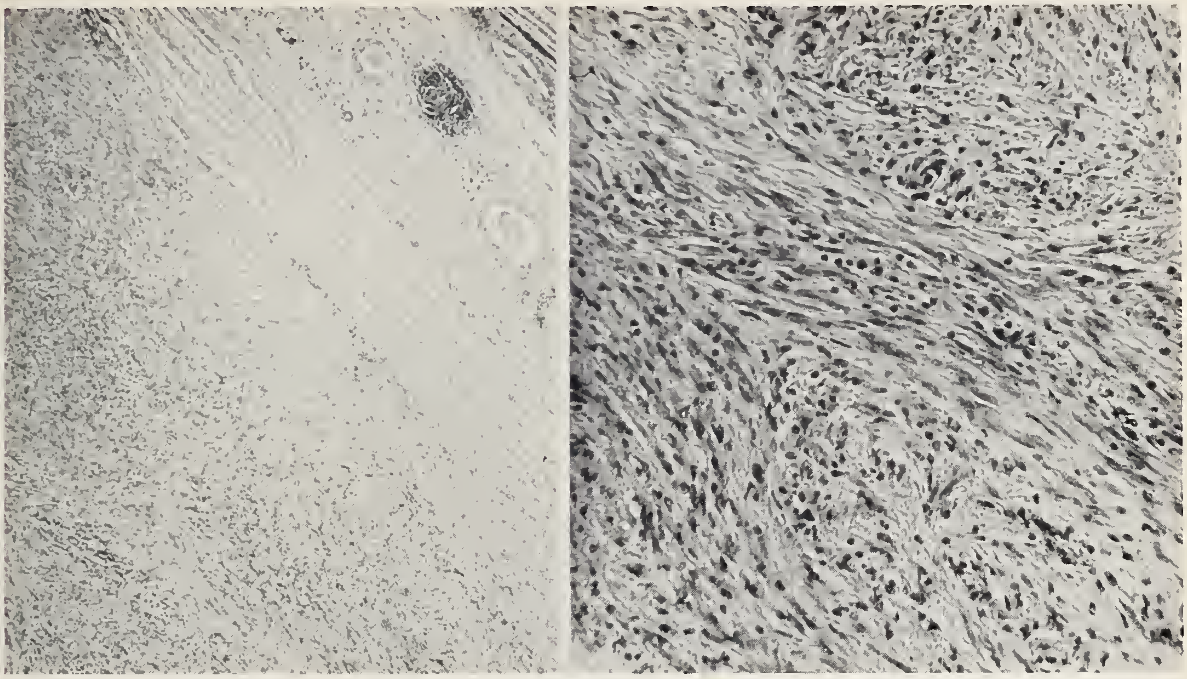


Figure 2.—Photomicrographs of specimen of lesion. *Left:* (×100), *Right:* (×400). Diagnosis: Locally destructive cellular neurofibrosarcoma.

incision over the right side of the posterior surface of the sacrum. A very thin layer of bone, representing the eroded roof of the neural canal, was elevated and a small portion of the tumor, which was fleshy, grey and vascular, was removed. The pathologist's diagnosis was neurofibroma. Subsequently, an operation for resection was performed. With the patient prone, a long right parasagittal incision was carried to the bone. By resecting the coccyx and reflecting the rectum, the surgeon exposed the presacral space. He transected the sacrum, crossing the third foramen on the right side, and divided the main trunks of the right third, fourth and fifth nerves, and the fourth and fifth on the left. The tumor was displaced entirely into the presacral space, drains and loose packing were inserted, and the incision was closed. The patient then was turned over and a lower midline incision was made in the abdomen. Retroperitoneal dissection beneath the pelvic floor delivered the tumor. A moderate amount of bleeding was controlled by ligation of the right internal iliac artery. The patient recovered promptly and was discharged from the hospital on the ninth postoperative day.

Pathologist's Report

The specimen was an oval mass approximately 10 cm. long and 7 cm. in diameter. One edge was irregular and contained several nerve trunks. Microscopically, the tumor was composed of columns of spindle-shaped cells. The cytoplasm was abundant and eosinophilic, and the nuclei were slightly irregular. Occasional cells were vacuolated. Mitosis was not readily found. A definite whorl pattern was present. Diagnosis: Locally destructive cellular neurofibroma. A low grade sarcomatous process cannot be excluded (see Figure 2).

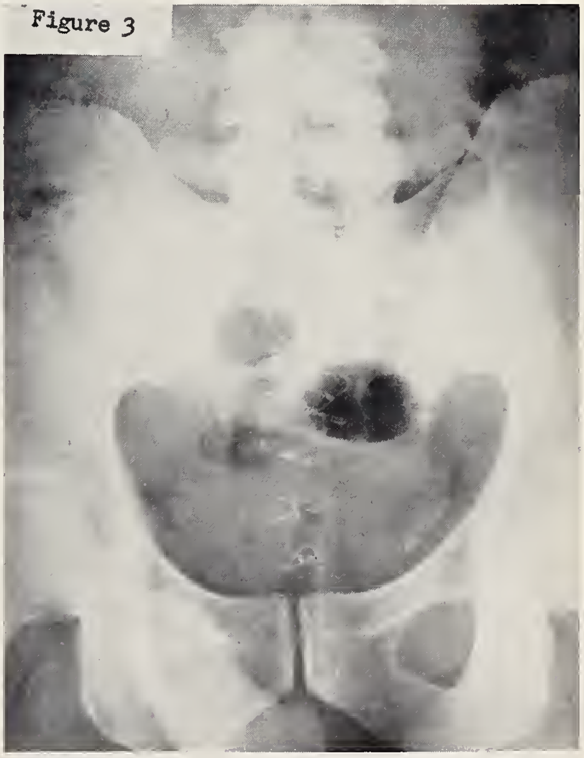


Figure 3.—Roentgenogram one year postoperative, showing residual defect of sacrum. Note: No enlargement right second sacral foramen.

When reexamined 12 months after the operation, the patient was well, without evidence of recurrence of disease, and without neurologic deficit other than some cutaneous numbness in a small zone in the saddle area. The sacral bony defect transmitted a cough impulse through soft tissues, but there was no hernial bulge. Figure 3 is a roentgenogram of the sacrum a year after the operation.

SUMMARY

A perineo-abdominal operation provided excellent exposure for a radical resection of a large tumor of the presacral region. The patient, a young man, had no visceral impairment after loss of five lower sacral nerves.

450 Sutter Street, San Francisco 8 (Shapiro).

REFERENCES

1. Brindley, G. V.: Sacral and presacral tumors, Ann. Surg., 121:721, 1945.

2. Butler, E. C. B.: Chordoma of sacrum, Proc. Royal Soc. Med., 44:195, 1957.

3. Kodoff, R. S., et al.: Journal of Albert Einstein Medical Center, 2:151, 1954.

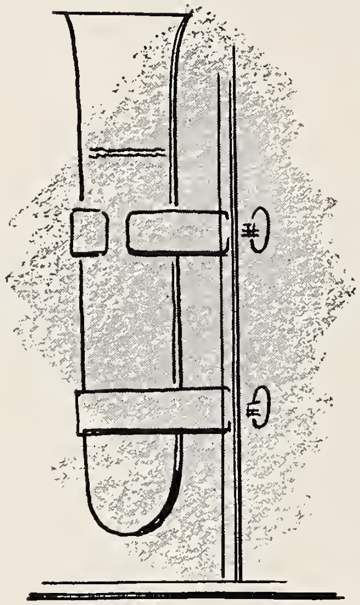
4. Kodoff, R. S.: Journal of Abdominal Surgery, October 1959.

5. Mixter, C. G., and Mixter, W. J.: Surgical management of sacrococcygeal and vertebral chordoma, Arch. Surg., 41:408, 1940.

6. MacCarty, C. S., Waugh, J. M., and Coventry, M. B.: Surgical treatment of presacral tumors, Proc. Staff Mayo Clin., 27:73, 1952.

7. Shackleford, R. T., and Rhode, C. M.: Sacrococcygeal chordoma, its surgical treatment, Ann. Surg., 141:952, 1955.

8. Whittaker, L. D., et al.: Tumors ventral to the sacrum, Ann. Surg., 107:96, 1938.



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EDITORIAL

A Plan of Our Own

PROXIMITY of the 1961 Annual Session of the California Medical Association brings to mind again that this occasion also marks a birthday for California Physicians' Service.

Twenty-two years ago, at the C.M.A. Annual Session of 1939, C.P.S. was activated. Formation of this plan, forerunner of a system of Blue Shield plans which now blankets the country, had been brought about by a vote of 101 to 4 in the House of Delegates of the California Medical Association in a special session in late 1938.

Preceding this action were studies which had started among physicians as early as 1917. A few physicians in the days of World War I were sensing a public demand for some method of prepaying the costs of medical services, some plan by which the unpredictable costs of medical care could be met through the predictable costs of a pooled fund.

These early studies culminated in the report in 1933 of the Committee on the Costs of Medical Care of which Dr. Ray Lyman Wilbur was chairman. Not much could be done about the problem at that time because the nation was in the midst of the depression, the A.M.A. was not in sympathy with the views of the majority of the Committee, and the idea of prepayment was a novel one.

In 1935, depression-bound physicians went so far as to propose to the State Legislature that a plan of state medicine be adopted in California. From our present position of hindsight, it is fortunate that industry, management, labor, agriculture and every other interest represented before the Legislature turned thumbs down on this proposal.

There followed the proposal of then Governor Culbert Olson in 1938 for a state system of medicine, a plan which was promptly vetoed by physicians and which failed in the Legislature. Parenthetically, it should be noted that the physicians who had advanced the 1935 medically-sponsored plan of state medicine were conspicuously absent from the 1936 House of Delegates. Their bid for glory failed on the legislative and home front alike.

Listing of these apparently unrelated but successive events gives ample evidence that the public desire to contribute to a fund for the payment of unpredictable medical care costs had not abated. The people of California, and of many other areas, wanted some means of providing for their costs of sickness. The California Medical Association recognized this desire and wisely figured that such a demand would and could be better met through medical rather than political leadership.

Studies by committees of the C.M.A. culminated in 1938 with the report of The Committee of Five, a hard working, hard hitting group of medical leaders possessed of foresight, skill and courage. They needed all three attributes in those days.

Their findings were translated into action in the 1939 special session of the House of Delegates, where, as noted, only four dissenting votes were cast on the proposal to create California Physicians' Service. At last, the doctors were in the business of providing their patients with a predictable method of meeting unpredictable costs.

This was the first statewide, medically-sponsored medical cost prepayment plan in the country. This was the start of a system which has now become a part of our lives and the lives of millions of patients throughout the country. California physicians may well be proud of their creation; others have paid tribute through emulation.

This recital would not be meaningful in a static organization. In California, however, nothing has been static for a good many years, including the C.M.A. The physician population in the state today includes a majority who came to California following World War II, physicians of unquestioned professional skill but not aware of the economic struggles medicine has undergone here for the past two decades.

History has now caught up with California's pioneering in the field of medical care cost prepayment. Blue Shield plans cover the country. Commercial insurance carriers have entered this field in growing numbers and with billions of dollars of coverage provided. Closed-panel and other prepayment plans have been developed on the early philosophies and economic judgments of the Committee of Five.

At this point it is well to remember that not only have these philosophies prevailed and been proved true; the basic concepts of the organization of C.P.S. have also remained intact.

Today, in the welter of health insurance plans, C.P.S. stands out in California as the only plan which the physicians themselves control.

Each physician member of the California Medical Association has an effective voice in developing C.P.S. policies. Each county society member has a vote in selecting the Delegates from his society to the House of Delegates. Each Delegate, once the House is in session, has a vote on policy matters which control and direct C.P.S.

Where else can a physician make his voice heard in such sensitive areas? Surely not in a commercial insurance company. Surely not in a closed panel plan. These organizations operate under methods of their own choosing and the physician who provides the care for which the organizations pay the cost becomes nothing more than a service station where payment is made on the basis of the company's own meter.

In California Physicians' Service, policies must be made, of course, by a top administrative board which uses modern business methods to forecast success or failure of various changes or to evaluate experimental proposals. This board is, and must be, responsive to the expressed wishes of the House of Delegates. The real policy-making originates in the House.

How well this chain of command operates is demonstrated by the numerous changes made by C.P.S. in its twenty-two years of business existence. Its early experiments in complete coverage at a ridiculously low cost were abandoned when their results were shown to be substandard. Other programs were tried and dropped when the physicians in the House of Delegates made their wishes known. Experiments in a variety of plans have been tried, some with good results, some not good.

What this all adds up to is that C.P.S. constitutes a plan which physicians may and do govern. The Council of the California Medical Association appoints three of its own members each year to the C.P.S. Board of Trustees, and in addition all other nominees for places on the C.P.S. Board are submitted by the Council to the House of Delegates for confirmation. This is a plan which has flexibility, which can make pilot studies, which may change with changing professional and economic conditions. Nowhere else is this potential opened up to physicians.

In the 1961 House of Delegates there will doubtless be a number of resolutions asking that C.P.S. do this or not do this. All such resolutions will receive careful study and, if adopted, will be handed to the Board of Trustees of C.P.S. for implementation. Policy-making thus flows directly, and immediately, from the decisions reached by the physicians of the state.

The statement may be trite but the fact remains the fact: California Physicians' Service is our own plan. It is ours to direct, for the direct benefit of of our patients and for the indirect benefit of the public as a gauge and governor for all other prepayment plans. It is what we make it.

For the benefit of all concerned, let us hope that the House of Delegates will again recognize its authority and its responsibility and produce answers for C.P.S. which will benefit the public and therefore the medical profession.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 466th Meeting of the Council, Los Angeles, Biltmore Hotel, February 10-11, 1961.

The meeting was called to order by Chairman Sherman in Conference Room No. 1 of the Biltmore Hotel, Los Angeles, on Friday, February 10, 1961, at 4:00 p.m.

Roll Call:

Present were President-Elect Bostick, Speaker Doyle, Vice-Speaker Heron, Editor Wilbur, and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, Shaw, Rogers, Dalton, Murray, Davis, Miller, Sherman, Campbell, O'Connor, Morrison, Anderson and Teall. Absent for cause, President Foster and Secretary Hosmer.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Bowman, Marvin, Whelan, Klutch and Drs. Batchelder and Miller of C.M.A. staff; Howard Hassard, legal counsel; Eugene Salisbury of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Lingerfelt of Fresno, Geisert and Smith of Kern, Field of Los Angeles, Somerville of Napa, Dochterman of Sacramento, Neick of San Francisco, Bailey of Tulare, Blankfort of Marin, Brown of Sonoma; Drs. Frank Malone, Thomas Elmendorf, William Hickey, Malcolm Watts and John Schaupp; Mr. Richard Philleo of the A.M.A.

1. *Riverside Plan:*

Councilor Wheeler gave a detailed report on the scope of activities and experience in Riverside County in the operation of a prepayment medical care program without fixed limits of professional compensation. Dr. John Morrison reported for California Physicians' Service that experience with this plan had been excellent and that the "Riverside Plan" was considered by C.P.S. to be a sound and productive field of experimentation in health insurance coverage.

2. *Medical Care for Military Dependents:*

A request from the Committee on Government Financed Medical Care was presented, asking approval of an extension of the present "Medicare" contract to cover the Government fiscal year ending June 30, 1962. On motion duly made and seconded, authority was voted for the appropriate officers to sign a renewal contract for the year ending June 30, 1962.

On motion duly made and seconded, the Liaison Committee to Medicare and to VA Home Town Care Programs were directed to continue its efforts to have the Department of Defense incorporate the provisions of the 1960 Relative Value Studies into the Medicare contract.

3. *San Mateo County Medical Society:*

On motion duly made and seconded, it was voted to permit the San Mateo County Medical Society to review the tabulated returns of the 1958 Relative Value Studies in conjunction with a study being made by the society on possible prepayment programs.

4. *Committee for Emergency Action:*

Dr. Bostick reported on a meeting held earlier by the Committee for Emergency Action, at which

PAUL D. FOSTER, M.D.	President
WARREN L. BOSTICK, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
SAMUEL R. SHERMAN, M.D.	Chairman of the Council
RALPH C. TEALL, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
DWIGHT L. WILBUR, M.D.	Editor
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General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400

ED CLANCY	Director of Public Relations

Southern California Office:
2975 Wilshire Boulevard, Los Angeles 5 • DUnkirk 5-2341

it was agreed to suggest to the American Medical Association (1) that the organization declines to take part in taped television programs unless adequate opportunity for editing were provided; (2) that restraint be used, especially as regards press releases, when controversial items were presented by other interests; (3) that all statements to the press be prepared with due regard to their emotional impact on the general public; (4) that paid publication advertising be employed where impartial press treatment did not appear to be forthcoming, and (5) that the A.M.A. make further efforts to plan discussions of health problems with representatives of labor, management, insurance and legislative bodies, on the subject of the provision of health care for all segments of the population.

Dr. Bostick also reported that the committee had voted to recommend to the Council that the members of the Committee for Emergency Action, together with the chairmen of the Commission on Medical Services, the Committee on Fees and the Committee on Government Financed Medical Care be named as a special committee to represent the Association in dealings with officials of the State of California on the question of uniform schedules for professional fees under state-sponsored programs. On motion duly made and seconded, this recommendation was approved.

5. *State Legislation:*

Mr. Hassard reported that bills had been introduced in the State Legislature which would (1) make the admission of podiatrists to staff membership in district hospitals mandatory, and (2) permit hospitals which are currently used for the training of podiatrists to provide internships and residencies for such students. On motion duly made and seconded, it was voted to oppose the first of these two measures and to recommend to the Committee on Legislation that it exercise its own judgment on the second.

6. *Conference of County Society Officers:*

Councilor Todd gave a progress report on the plans for the Annual Conference of County Society Officers to be held February 11 and 12. Members of the Council were invited to attend a dinner honoring the guest speakers for this conference.

7. *Commission on Community Health Services:*

Chairman MacLaggan of the Commission on Community Health Services presented several proposals approved by the committee for legislation in the field of blood alcohol determination and presumption of drunkenness among automobile drivers registering various levels of blood alcohol. On motion duly made and seconded it was voted to refer these recommendations to the Committee on Legislation.

8. *Committee on Public Relations:*

Dr. Malcolm Watts, chairman of the Committee on Public Relations, reviewed the program and the objectives of the committee. Dr. John Schaupp, chairman of the subcommittee on radio, television and motion pictures, reported on the progress of the television programs which had previously been approved for production. John Hunton reported on the expenditures to date by the committee and the prospective expenditures to the close of the fiscal year.

Councilor Campbell proposed that study be given to amendments in the By-Laws of the American Medical Association to provide that each state association with 10,000 or more active members be entitled to one position on the Board of Trustees.

Councilor Teall discussed the public relations program and urged that immediate attention be given to a more aggressive presentation of the position of the medical profession to the public.

On motion duly made and seconded, the following resolution was approved:

Resolved: That the Committee on Public Relations, in view of current national and state pressures for compulsory medical care, be instructed by the Council to implement immediately, in consultation with the Committee for Emergency Action, its second phase and more aggressive approach supporting C.M.A. attitudes regarding financial and economic facets of the present and proposed systems of medical care; and that the Committee on Finance be instructed to explore all possibilities of using funds now held in trust for this purpose.

Adjournment:

There being no further business to come before it, the meeting was adjourned on Saturday, February 11, 1961, at 9:20 a.m.

Samuel R. Sherman, M.D., *Chairman*
John Hunton, *Acting Secretary*

Maternal MORTALITY REPORTS

THE COMMITTEE ON MATERNAL AND CHILD CARE was organized in December 1956 and has been responsible for developing and conducting a continuous study on all maternal deaths in California. The study is a cooperative one between the California Medical Association and the California State Department of Public Health.

The committee is composed of obstetricians, pediatricians, general practitioners, pathologists, anesthesiologists and public health officers. It is charged with the responsibility of careful study of each maternal death (a death occurring in any woman who is pregnant or within 90 days of termination of pregnancy). The committee has the responsibility of identifying the avoidable factors in each death, of developing and implementing recommendations for preventing further similar deaths and of preparing periodic reports of statistical analysis of its findings.

The study is on a voluntary basis and permission is first obtained from the attending physician before any investigation is conducted. The committee feels that the material obtained from this study will have great educational use.

Sincere thanks is acknowledged to Theodore A. Montgomery, M.D., and Leslie Corsa, M.D., of the California State Department of Public Health, and to William Benbow Thompson, M.D., and Edmund William Overstreet, M.D., who have given so generously of their time, effort and guidance in the committee's work.

JAMES W. RAVENSCROFT, M.D.
Chairman, Committee on Maternal and Child Care

These case reports come from the files of the State Department of Public Health which, together with the California Medical Association, now sponsors the statewide studies of all maternal mortalities. Selected cases are to be presented here from time to time as a matter of interest and illumination to all physicians concerned with the practice of obstetrics. It is hoped that a review of such significant cases will help to improve the welfare of future California mothers.

CASE 1

The patient was a 38-year-old gravida 5, para 2. She sought initial medical care at one hospital, where she was seen at 4:15 p.m. Her condition at that time is described as "*shocky, cold and clammy, with a feeble, thready pulse and moderate rigidity and tenderness of the abdomen in the epigastrium.*"

Previous medical and surgical history is reported as "not available." The patient gave her last menstrual period as having occurred 20 weeks before, but *she had received no prenatal care.* One week before examination in the hospital there was sudden onset of severe epigastric pain, nausea, vomiting and weakness. Fetal movements had not been felt for four hours.

When the patient was first seen, differential diagnosis of acute pancreatitis, biliary colic or perforating ulcer was entertained. At 4:30 p.m., 10.0 mg. of morphine sulfate, 8 ml. of epinephrine, 1:1000 solution, and intravenous plasmoid (amount not stated) were given. Although the patient was under observation for approximately four hours, there is *no report of any laboratory study.*

There is no further knowledge of the patient's condition and progress for the next four hours, after which *she was transferred to a second hospital.* On arrival there at 8:10 p.m., she was in profound shock with a blood pressure of 30/0 mm. of mercury, no palpable pulse, and a precordial rate of 145 per minute. The pregnant uterus was difficult to outline due to moderate abdominal rigidity and generalized abdominal tenderness, most pronounced in the right upper quadrant and suprapubic areas. There was no gross evidence of infection. Except for slight vaginal spotting, there was and had been no gross external bleeding. Laboratory study of the blood showed leukocytes numbering 32,700 per cu. mm.and a *hemoglobin content of 8.1 gm. per 100 ml.*

General measures to combat shock were begun at once. The first transfusion was started 15 minutes after admission and 5 units of blood were given in the next nine hours. Phenylephrine (Neosynephrine®) was given intramuscularly four hours after admission, and immediately afterward administration of this drug by intravenous drip was begun. Nine hours after admission, intravenous administration of levarterenol was started. Intranasal oxygen was started four hours after admission.

The patient died nine hours and 20 minutes after admission to the second hospital, 13 hours and 15 minutes after the initial examination at the first hospital.

CORONER'S AUTOPSY REPORT (Significant Findings)

1. At least four liters of blood in the abdominal cavity.

2. Uterine pregnancy, approximately five months' duration.

3. Multiple subserosal uterine varices.

(a) One ruptured varix—in an area of pronounced thinning of the uterine wall near the placental site.

COMMENT

1. This maternal death resulted from a most unusual and rare lesion. It serves to illustrate, however, the speed of occurrence and the fulminant nature of certain complications of pregnancy.

2. This fact alone points out the importance and essentiality of adequate prenatal care. Had the patient in the case here reported been receiving it, early investigation of her epigastric pain one week before might have averted the lethal terminal episode, for one suspects that intra-abdominal bleeding of small degree probably started at that time. The patient's omission of prenatal care and delay in seeking medical help undoubtedly contributed to her death.

3. Inadequate initial care. Despite the recognition by the first hospital of shock and a possible intra-abdominal hemorrhage, only minimal supportive and diagnostic measures were carried out. Even these should have included immediate blood study for evidence of blood loss, with subsequent transfusion therapy for replacement and for shock. A simple determination of packed cell volume or of hemoglobin might have been of inestimable value even to the second hospital: A comparison of determinations might have made continuing, grave, intra-abdominal hemorrhage more evident.

Finally, the propriety of transfer of this critically ill patient to another hospital is open to serious question. The patient's life could probably have been saved by early laparotomy at the first hospital.

4. The second hospital recognized the probability of an intra-abdominal hemorrhagic catastrophe. Ample measures to combat shock were carried out there. Presumably operation was progressively postponed in the hope of first correcting the shock, a standard surgical principle. Yet when massive hemorrhage continues, this principle does not apply. Another example is that of ruptured ectopic pregnancy. It must have been apparent that this patient's intra-abdominal bleeding was gaining on the antishock efforts—though no *repeated* blood determinations confirmatory of this course are reported. Even in hospital number two, this patient's life might have been saved by a bold recourse to abdominal surgery even in the face of severe shock. It is easy for us to say this in hindsight, but not nearly so easy to do it at the critical time. Possibly the memory of this case may contribute to saving some future mother under similar circumstances.

CASE 2

THE PATIENT was a 40-year-old gravida 3, para 2, whose past medical and surgical history is not significant. During her present pregnancy she was seen by a physician on two occasions, in the second and sixth month of pregnancy. The initial physical examination was reported as normal, including clinical estimation of the pelvis.

The pregnancy progressed uneventfully until labor began spontaneously, two days past the estimated date of confinement, and the patient was admitted to the hospital in early labor. During labor of 14 hours, for reasons not stated "augmentation of labor" was accomplished by the *intramuscular administration of one-half minim of Pitocin®* (oxytocin injection) on two occasions approximately six and a half hours before delivery. Analgesic agents given during the first stage were meperidine, 50 mg., and Phenergan® (promethazine) 12.5 mg., both administered intramuscularly.

During the second stage of labor, analgesia was administered by a physician by intermittent N_2O-ether, and the same agents were used for a "short, continuous anesthesia" for delivery. Deep transverse arrest of the vertex occurred, so delivery was accomplished by *Kielland forceps, with application in the classical manner.* The baby, who weighed 6 pounds 4½ ounces, was delivered in good condition.

With delivery of the infant's head, Ergotrate® (ergonovine) 1 ml., was given intravenously. The placenta was delivered spontaneously four minutes after the baby. *No mention is made of any manual exploration of the uterine cavity.* No undue bleeding is reported up to this point, but immediately after the placental expulsion a loss of 500 ml. of blood occurred, ascribed to "uterine atony." At once. Pitocin® 1 ml. intramuscularly, and Methergine® (methylergonovine), 1 ml. intravenously, were administered and continuous massage of the uterine fundus was instituted. The *cervix* was then inspected and a *4-cm. laceration* was noted (location not specified) and repaired. Although episiotomy had been performed there was further laceration of the vagina and repair of both was carried out. *Again, there is no mention of any exploration of the uterine cavity.*

Following the repairs, the patient was reported to be in good general condition. But suddenly there occurred what is simply described as a "massive" hemorrhage. The patient went promptly into such profound shock that venous collapse prevented venipuncture to give plasmoid. While a cut-down was in progress the patient died—approximately one hour after delivery of the placenta.

Postmortem examination was not performed.

COMMENT

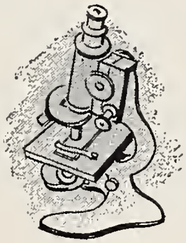
1. One can only speculate upon the basic cause of maternal death. Such massive, sudden hemorrhage from simple uterine atony is so rare that one strongly suspects uterine rupture or laceration. Such a tear into the uterine vessels could alone account for the massive hemorrhage described—perhaps with unrecognized intra-abdominal bleeding as well.

2. There is no evidence to suggest that uterine rupture occurred during the first stage of labor. Yet it might well have *started* as a result of injudicious intramuscular use of oxytocin as a labor stimulant. In approximately one patient in a thousand, inherent sensitivity to oxytocin is so great that even half a minim will produce severe tetanic uterine contraction and even uterine rupture. Labor stimulation by oxytocin is best accomplished by intravenous use of very dilute solutions (not more than 0.5 ml. in 1000 ml. of intravenous solution) with special attention to extremely low dosage during the first half hour of intravenous flow as a test for sensitivity. Moreover, even thereafter it is important to bear in mind that any change in rate of drip is not fully reflected in uterine activity for about half an hour.

3. It seems likely that uterine rupture occurred during the forceps delivery, perhaps from undue traction upon a cervix not fully retracted, perhaps from the classical application of Kielland forceps. Following such an application, it should be routine to explore the uterine cavity after placental expulsion, in search of a laceration. In this patient, the discovery of a 4 cm. cervical tear and an additional vaginal tear strongly suggested the occurrence of undue trauma during forceps application or during delivery. Hence uterine exploration was mandatory. Whether such exploration might have saved the patient's life by leading to prompt hysterectomy is debatable.

4. Finally, this case reemphasizes the imperative necessity of *not* sending a patient from the delivery room to her postpartum bed for *at least an hour after completion of the third stage*. The vast majority of postpartum hemorrhagic complications occur during this time. Most of them are not as fulminant as in this case, and the *immediate* availability of delivery room equipment, anesthesia and personnel can often tip a grave balance in the patient's favor, whereas the delay occasioned by intermittent patient observation on a ward and transfer back to the delivery room may be the final straw in a sequence of lethal events.

CALIFORNIA MEDICAL ASSOCIATION
COMMITTEE ON MATERNAL AND CHILD CARE



Hypnosis

A Report of the C.M.A. Committee on Mental Health

TODAY the press, radio and television highlight the use of hypnosis as an easy, spectacular and magical approach to the relief of pain and the rapid dissolution of physical symptoms, and for entertainment of an unusual type.

The public, in increasing numbers, is requesting the use of hypnosis for relief or cure of a multiplicity of symptoms. "Quickie Courses," on hypnosis, sponsored by mixed professional and lay groups are being offered as the use of this medical tool increases in popularity. Some courses are offered for entertainment purposes and may be "taken" by the way of records or correspondence.

The public is being misled, unproved claims are being made and the use of hypnosis is being oversimplified and events overdramatized.

Improper use of hypnosis can be very dangerous to some people (both patient and hypnotist himself). Study has shown the onset of a large number of untoward events, including psychosis, in the artificial masking of organic problems by improper use of hypnosis.

The nature of hypnosis renders its inappropriate use particularly hazardous. For hypnosis to be used safely, even for the relief of pain or for sedation, more than a superficial knowledge of the dynamics of human motivation is essential.

Experience has shown that many untoward complications do not present themselves for some time after the use of hypnosis. In fact, several homicidal and suicidal events have occurred in association with the use of hypnosis.

The C.M.A. has a duty to inform the public and its own members about the dangers of hypnosis and the limits of its proper use.

Hypnosis is a specialized medical procedure and as such is an aspect of medical practice. Hypnosis provides an adjunct to research, to diagnosis and to treatment in medical practice.

Hypnosis is appropriately and properly used in the course of therapy only when its employment serves therapeutic goals without causing undue risks to the patient. With selected patients, it can be used for sedative, analgesic and anesthetic purposes; for the relief of apprehension and anxiety; and for symptom suppression.

Hypnosis or hypnotic treatment, as in any other medical procedure, calls for all examinations necessary to a proper diagnosis and to the formulation of the immediate therapeutic needs of the patient.

The technique of induction of the trance state is by far the least important of the many facets of the hypnotic procedure and under no circumstances should it be taught or used independently.

Proper safeguards for the use of hypnosis are vitally important to patients, to physicians and to the general public. In the interest of encouraging the safe use of hypnosis, the following principles are presented:

1. Physicians practicing hypnosis should do so only in their particular field of medical competence.
2. The need for continued study of hypnosis and for adequate research is emphasized, with particular reference to delineating its place in the total treatment program.
3. An expansion of facilities for the teaching of hypnosis is needed particularly at the postgraduate level. The establishment of postgraduate courses in medical schools and other teaching centers, under the direction of the department of psychiatry is recommended.
4. Training in all aspects of hypnosis should be made available to physicians and dentists requesting it.
5. The teaching of hypnosis should be of sufficient duration and depth for physicians or medical students to acquire adequate understanding of its appropriate place in relation to other medical treatment modalities; of its indications and contraindications; of its values and its dangers.
6. The teaching of hypnosis should take place in medical schools where students can acquire adequate knowledge of its principles and application. When taught in such a climate, where students can acquire adequate knowledge of medical and psychiatric principles, hypnosis may become a useful adjunct to therapy.
7. The use of hypnosis for entertainment purposes, because of the harm it may do to certain individuals, should be prohibited by law. This is a dangerous and improper use of hypnosis, as well as degrading to a useful medical tool. (1960 House of Delegates resolution No. 37 requests the introduction of legislation to accomplish this end.)
8. The C.M.A. condemns the advertising of hypnosis for any purpose.
9. The C.M.A. vigorously condemns correspondence or recorded courses in self-hypnosis or hypnosis per se.

The Place of Hypnosis in Medicine

ALFRED AUERBACK, M.D., San Francisco

THE CURRENT CONTROVERSY regarding the place of hypnosis in medicine is another chapter in a cyclic history extending back over the past two centuries. While hypnosis, as a technique, has long been practiced in primitive cultures going back to the earliest civilization, its use was limited to the medicine men and priests of these early cultures (Greek, Egyptian, Oriental). Today the press, radio and television highlight its use as an easy, spectacular and magical approach for the relief of pain and the rapid dissolution of symptoms. Man has always eagerly sought a rapid and harmless way to ease himself of pain, anxieties, fears and symptoms. In this quest for rapid cures, enthusiastic claims have tended to becloud critical evaluation of hypnosis.

The first medical man to make use of hypnosis was Mesmer who, in Vienna and then in Paris about the year 1778, introduced the concept of "animal magnetism." A study by the French Academy about six years later discredited his work. Over the period of the next half century a number of physicians, in particular, Elliotson, Braid and Esdaile made use of hypnosis in their medical practice. They performed surgical procedures under hypnotic anesthesia with remarkable results and a minute mortality rate. Braid introduced the word "hypnosis" in 1843. Hypnosis had a vogue in the United States during the 19th century. In the *Journal of the American Medical Association*, October 27, 1888, there was a report on hypnosis incorporating certain inclusions as follows:

> "One never hypnotizes any subject without obtaining his or her formal consent. Always hypnotize in the presence of a third person. Never give any suggestion other than those for the patient's happiness and health. Public exhibitions of hypnosis should be prohibited by laymen and the use of this agency should be confined exclusively to the medical profession."

These rules still apply three-quarters of a century later.

In the latter part of the 19th century hypnosis came under study in France with Bernheim, Liébault and Charcot, the most prominent practitioners. At this time, it was recognized that hypnotic suggestion would remove hysterical symptoms in patients. Freud, after study in Charcot's clinic, returned to Vienna and began to use hypnosis in treating his patients. He soon found that while hypnotic suggestion would remove symptoms, very often the patient would develop other symptoms to replace those that had been removed. In addition, he found that many patients could not be hypnotized. Finally Freud rejected hypnosis as a method of treatment. While Freud's experience has profoundly colored the attitude of psychiatrists since that time, the fact remains that, over the years, many psychiatrists have tried hypnosis as a therapeutic technique and in nearly all cases have discarded it as an unsatisfactory tool. During World War I and again during World War II hypnosis was used on soldiers suffering battle fatigue and other emotional reactions to the stresses of war. Under hypnosis they could discuss these stressful situations and be relieved of their anxieties in many cases with sufficient improvement to permit their return to the battle lines. In the past fifteen years hypnosis has had an ever increasing interest so that thousands of physicians and dentists across the country now have had experience with it and use it in variable degree in connection with their practice.

In 1826 the Paris Academy of Sciences deliberated for five years on the place of hypnosis in medicine. The British Medical Association reported in 1892 on its use. While these early studies indicated hypnosis had some place in the practice of medicine, the question arose repeatedly as to where it belonged in medicine with particular emphasis upon its indications, limitations and dangers. In November, 1953 the British Medical Association appointed a subcommittee to consider the use of hypnosis in relation to medicine and present day medical practice. The report of this subcommittee was published in a supplement of the British Medical Journal, April 23, 1955.

REPORT OF THE BRITISH MEDICAL ASSOCIATION

The report described the hypnotic state as follows:

"A temporary condition of altered attention in the subject which may be induced by another person and in which a variety of phenomena may appear spontaneously or in response to verbal or other stimuli. These phenomena include alterations in consciousness and memory, increased susceptibility to suggestion, and the production in the subject of responses and ideas unfamiliar to him in his usual state of mind. Further phenomena such as anesthesia, paralysis and rigidity of muscles and vasomotor changes can be produced and removed in the hypnotic state."

Among the conclusions of this report are the following:

1. "While hypnotism is of value in the treatment of so-called psychosomatic disorder and psychoneurosis some enthusiastic supporters of this form of treatment fail to enumerate the contraindications and give the impression that it constitutes an approach which should replace all other forms of psychiatric treatment. In the opinion of the subcommittee this view is mistaken. Like other remedies, hypnotism has its indications and contraindications and considerable knowledge and expert judgment are required to decide when hypnotism is likely to help the patient and whether it should be used by itself or as a complement to the other methods of psychotherapy.

"For these reasons, the subcommittee is of the opinion that hypnotism should not be regarded as a specialty independent of psychological medicine.

2. "In addition to the treatment of psychiatric disabilities, there is a place for hypnotism in the production of anesthesia or analgesia for surgical and dental operations, and in unsuitable subjects it is an effective method of relieving pain in childbirth without altering the normal course of labor. It has been claimed that the shock of operative procedures can be mitigated when these are carried out under deep hypnosis but further research is desirable. The amount of work necessary to prepare a patient to undergo surgical operation under hypnotism limits its usefulness.

3. "The dangers of hypnotism have been exaggerated in some quarters. The subcommittee is convinced, however, that they do exist, especially when it is used without proper consideration on persons predisposed, constitutionally or by the effects of disease, to severe psychoneurotic reactions or antisocial behavior. The commission of crimes involving even danger to life is not entirely to be ruled out.

4. "Hypnotism may involve the rapid or immediate development of a relationship between hypnotist and subject of the same order and intensity as is produced more slowly in the course of psychotherapy. The trained psychotherapist must be aware of this relationship as part of the therapeutic process and must recognize its potentiality for harm and be able to deal with it. The application of the hypnotic technique without such knowledge and experience provides no control of the powerful emotions which may be released. For this reason, the subcommittee considers that harm can be done by the application of hypnotism in unsuitable subjects, particularly when it is used by persons indifferent to the well-being of the subject or ignorant of the morbid complications of the hypnotic state.

5. "It is recommended that a description of hypnotism and its therapeutic possibilities, limitations and dangers should be given to medical undergraduates during their psychiatric course.

6. "Instruction in the clinical use of hypnotism should be given to all medical postgraduates training as specialists in psychological medicine and possibly say, to trainee anesthetists and obstetricians, so that they will understand its indications and practical application. The subcommittee holds that no special "gift" is required to induce it; there are various techniques of equal efficacy.

7. "As its work progressed, the subcommittee became convinced of the need for further research into hypnotism. Medical men have hesitated to take a serious interest in a procedure which is so unlike the orthodox methods of medical science. Nevertheless, it is thought that since hypnotism can achieve good results in certain cases and since present theories as to its nature and mode of action are speculative it constitutes a challenge to medical science."

REPORT OF THE AMERICAN MEDICAL ASSOCIATION

In November, 1956, at the annual meeting of the Council on Mental Health of the American Medical Association with the representatives of the Mental Health Committees of the state medical associations, a subcommittee made a study of the use of hypnosis in medical practice. The Council on Mental Health, constituting itself as a committee of the whole, studied this report over a two-year period and submitted its recommendations at the annual meeting of the American Medical Association in June, 1958. At this time, the report was endorsed by the Board of Trustees and the House of Delegates of the American Medical Association. In the *Journal of the A.M.A.*, September 13, 1958, "A Report on Medical Uses of Hypnosis" was published. The conclusion of this report is as follows:

"General practitioners, medical specialists and dentists might find hypnosis valuable as a therapeutic adjunct within the specific field of their professional competence. It should be stressed that all those who use hypnosis need to be aware of the complex nature of the phenomena involved.

"Teaching related to hypnosis should be under responsible medical or dental direction and integrated teaching programs should include not only the techniques of induction but, also, the indications and limitations for its use within the specific area involved. Instruction limited to induction techniques alone should be discouraged.

"Certain aspects of hypnosis still remain unknown and controversial, as is true in many other areas of medicine and the psychological sciences. Therefore, active participation and high level research by members of the medical and dental professions are to be encouraged. The use of hypnosis for entertainment purposes is vigorously condemned."

While hypnosis has been and is being used for the alleviation or elimination of symptoms or habits, the physician using it should be aware of the dangers involved. It must be realized that symptoms or habits develop for a reason even though the reason in most cases is unknown to the patient. The development of headaches, pruritus, tics, fears, phobias, allergic phenomena and other similar conditions are the results of what is going on within the psychic life of the individual. The headache may be a substitute for a rage reaction, the pruritus or allergic symptoms may be a result of external stimuli which the patient interprets as noxious in nature. Excessive smoking, drinking or eating represent techniques unconsciously developed to handle the disturbing problems in the patient's life. While hypnotic suggestion may alleviate or eliminate these symptoms, there is always the possibility that new symptoms may arise to take their place. The disappearance of the headache may be followed by tantrums or rage reactions. The elimination of smoking may be followed by overeating. Disappearance of nail biting or finger sucking may be followed by teeth gnashing. Sometimes the anxiety symptom or the phobia may be covering a serious psychiatric disorder and its removal by hypnotic suggestion may be followed by the onset of an acute psychotic reaction. There is an increasing number of cases of untoward reactions following hypnotic procedures. It cannot be too strongly stressed that symptoms represent an attempt at solution of the patient's intrapsychic conflicts and their indiscriminate removal by hypnotic methods may trigger catastrophic results. To remove these symptoms by means of hypnosis without first understanding the personality makeup and psychodynamic factors underlying the symptom may cause a serious disruption in the patient. Physicians should have a basic knowledge of personality structure, character disorders and mental mechanisms in order to avoid the possibility of untoward sequelae.

The results of hypnotic repression may be considered in a manner similar to the housewife who rearranges the furniture in her living room. On moving the furniture around she can make the room look entirely different but fundamentally it contains the same pieces as it had before. Similarly, a patient after hypnotic treatment is still much the same person as he was before even though his headache or tic or phobia apparently has disappeared. Often the patient appears well and may continue well and there is no evidence of any untoward replacement of the offending symptom. In such cases, it may be assumed that hypnotic treatment did benefit the patient. However, there always exists the possibility that at some later date the repressed symptom or some substitute symptom may recur.

In January, 1961, a questionnaire on hypnosis was sent to 830 psychiatrists practicing in California. Of that number 403 psychiatrists responded to the questionnaire of whom 188 had had some experience with hypnosis. Of these, 50 were using it as a psychotherapeutic technique at the time of this survey and of these only 20 found it to be really worthwhile. The majority reported that in their hands it had not proven useful. Complaints included the fact that the results were variable, the induction was too difficult or time consuming, interference with the doctor-patient relationship developed often with increased dependency by the patient. Very frequently, untoward events would occur. Seventy-five psychiatrists reported 114 cases of psychosis triggered by hypnotic measures. Anxiety reactions, panics, sexual acting-outs, depression and suicidal attempts, were some of the other undesirable results of treatment. Cases were cited where hypnosis induced psychopathological states in the hypnotist himself.

This survey indicated that up to the present the training of physicians and psychiatrists in the techniques, uses and limitations of hypnosis has been sadly neglected. It was felt generally that psychiatrists, physicians and dentists should be trained in the techniques of hypnosis with emphasis upon an understanding of human personality and psychodynamics. In the field of psychiatry, it was felt that hypnosis should be used largely as a research tool until its place is better defined. However, it was felt that in the production of anesthesia and analgesia for obstetrics, dentistry and surgical procedures hypnosis definitely had a place. However, any physician or dentist using it should understand its emotional significance to the patient.

While there is an agreement that hypnosis is useful in the production of anesthesia and analgesia, it must be recognized that not all people react favorably to a feeling of "losing control" or the fact that they might be "coming under somebody else's influence." In the prepsychotic individual even a transient dissociation produced for dental analgesia through hypnosis may trigger untoward results.

Another area of danger is the use of posthypnotic suggestion. It is possible for the patient in hypnotic trance to be given various suggestions for automatic behavior at variable periods following termination of the hypnotic trance. During these periods of posthypnotic automatism the patient is unaware of his surroundings to some degree and may expose himself to danger or do some foolhardy deed. A number of such instances were reported in the survey.

There is no question that hypnotic methods represent a powerful tool in the hands of the physician who is knowledgeable on the subject. With an understanding of the psychological workings of his patient the doctor can, through hypnosis, recognize the patient's nonverbalized fears and can reassure him on the basis of his knowledge. However, hypnosis is a two-edged sword and when used unwisely and injudiciously or in areas beyond the range of the physician's competence, unfortunate results may develop. At times even in the hands of a skilled psychiatrist unexpected mishaps may occur in association with the use of hypnosis.

In the newspapers and the telephone directory are advertisements for institutes and consultants offering to "aid the personality, the memory, mind or nerves of patients and to relieve shyness, speech or sleep difficulties, eating or drinking problems" to name but a few. The background, training and motivation of many of these individuals is open to question. The state of hypnosis is not therapeutic. It is what is done under hypnosis in relation to the total problem of the patient that counts. Too often these unscrupulous individuals have no qualifications whatsoever for the work they undertake to do.

Despite its long history very little is still known about the nature of hypnosis, its areas of usefulness and its possible dangers. Hypnosis should be taught to the medical students as part of their training so they can incorporate it into their medical armamentarium learning both the indications and contraindications for its use. Physicians or dentists using it should understand its uses and abuses and not venture beyond the limits of their professional training. The temptation to probe the psyche may lead to disaster. Even in the most experienced hands untoward events can occur. One psychiatrist reported the precipitation of overt psychoses in two patients. "I got scared and quit hypnosis." Another stated that he "cured" a patient's hysterical blindness, whereupon she stabbed her boy friend. Many reported psychotic episodes following hypnotic weight reduction.

The magical quality implicit in hypnosis gives the untrained practitioner feelings of omnipotence and psychotic episodes in the hypnotist himself are not infrequent. Several months ago a self-trained "hypnotist" killed several persons in a psychotic episode while trying to entice a girl into sexual activity in the hypnotic state.

The Committee on Mental Health of the California Medical Association has been studying this problem of hypnosis. The committee feels that the improper use of hypnosis can be very dangerous. Its studies have shown that very often the public is being misled, that unproved claims have been made, that the use of hypnosis is being oversimplified and cures are being overdramatized. The committee believes that the medical profession has a duty to inform the public and the members of the medical profession about the dangers of hypnosis and the limits of its proper use. It is a recommendation of the committee that courses in hypnosis should be given exclusively in conjunction with recognized medical teaching institutions under the Department of Psychiatry. These courses should be conducted over fairly long periods of time, perhaps six months, in conjunction with other undergraduate and postgraduate training in medicine.

In February, 1960, at the Annual Meeting of the California Medical Association, the House of Delegates passed resolution No. 37 which opposes the use of hypnosis for entertainment purposes because of the harm is may do to certain individuals, that it degrades a useful medical tool and that the California Medical Association should encourage the introduction and passage of necessary legislation that would prohibit this dangerous and improper use of hypnosis.

Uses and Abuses of Hypnosis

JACK B. LOMAS, *M.D.*, Los Angeles

THE REVIVAL OF INTEREST in the use of an old medical tool—hypnosis, has attracted a great deal of attention of physicians, psychologists, dentists and laymen. Press, radio, television have highlighted its use as a spectacular and easy magical approach for the relief of pain and a rapid dissolution of symptoms as a quick and easy method to solve man's ills. Throughout the ages, and again now, man eagerly seeks a rapid easy and harmless approach to ease himself of pain, anxiety, fear and disabling symptoms. In this quest for the rapid cure or "magical pill" or method, enthusiastic claims cloud his critical judgment. Spectacular responses to suggestion as in hypnosis may often produce temporary relief without any consideration being given to the lasting value of the method used or the price man may have to pay in the long run for the "cure."

It is our responsibility as physicians most directly involved in the care of our patients to adhere strictly to this critical judgment and evaluation of methods used in medical practice. As psychiatrists, we should call to the attention of our colleagues the benefits and usefulness of hypnosis, but also its side effects and drawbacks.

The renewed interest in hypnosis by the public has resulted in pressure on the physician who seeks to meet demands of patients requesting the use of hypnosis for relief or cure of a multiplicity of symptoms. To satisfy these patients' pressures, many physicians who have never been interested or trained in the uses of this method have sought ways to fulfill this demand. "Quickie courses" on hypnosis sponsored by mixed professional and lay groups attempting to fill this vacuum have attracted physicians, dentists, psychologists, as well as laymen to supply this demand. The qualifications and motivations of many individuals sponsoring these one or two-day courses is open to question. A number of such courses or "seminars" have been closely tied up with entertainment and spectacular settings. One sponsor even offered to make reservations for "girlie shows" in Las Vegas during the "seminars" which would seem to identify hypnosis with entertainment and something spectacular as well as a gamble.

Fortunately, very few professional people who have learned this technique (which can be learned in an hour or two) have pursued its use in their practice. The percentage of physicians who use this method in their practice is relatively small. Some anesthetists, obstetricians, surgeons, dentists, psychiatrists and general practitioners have used this tool to good advantage in selected and fairly well defined accepted medical areas with a minimal amount of adverse effects. By far the greatest harm results from the use of this method by untrained self-called psychologists, lay healers who advertise themselves as specialists in hypnotism. They advocate its use as a means in itself to remove symptoms and encourage the use of self-hypnosis.

Hypnosis is a valuable psychiatric tool but unwisely used can threaten the sanity of patients or of the untrained hypnotist himself, if unskillfully employed. A number of communications have come to my attention from psychiatrists who have had to deal with the delayed side effects of the original stimulus of hypnosis and which ended in a psychosis or a severe personality disturbance requiring extensive psychiatric help and often hospitalization. Several malpractice suits have been reported in which the competence of the one or two-day course hypnotist was under question. The American Medical Association legal department in 1959 cited two such malpractice suits involving large sums of money.

More and more cases with post-hypnotic bad effects are coming to the attention of psychiatrists, that began in a benign way with little attention to the knowledge of the whole problem facing the patient and no awareness of underlying psychodynamic factors involved. Meldman[1] is one of these physicians who are increasingly reporting personality decompensation after hypnotic symptom suppression. As medical director of a 50-bed psychiatric hospital, I have seen a few such patients who decompensated after one or a few hypnotic experiences requiring hospitalization and intensive psychiatric care. One such patient, previously an adequately functioning individual, accompanied a friend at her session of self-hypnosis. Several days later this onlooker was obsessed by the idea that the hypnotist had "taken her mind away." This was the beginning of an acute psychotic breakdown which, fortunately, was seen early and which responded rapidly to intensive psychiatric care.

Many times, symptoms such as phobias, nonorganic pain, hysterical paralysis or dermatitis, to name a few, are found in patients as a last line defense against a more serious and deeper emotional conflict such as a severe depression with suicidal ideas or a schizophrenic process. To remove these symptoms by means of hypnosis without first helping to establish a better method of dealing with the hidden problem may result in a serious eruption of the underlying problem. Physicians should have a basic knowledge of personality structure, character defect disorders, mental mechanisms and a knowledge of the mechanisms of defenses in order to avoid untoward sequelae in the adjunctive use of hypnosis.

Doctor Harold Rosen, chairman of the A.M.A. Committee on Hypnosis, warns against the encouragement of the use of self-hypnosis unless the person who attempts to use it has had an intensive multi-session psychiatric evaluation. He reports how some dentists and obstetricians have suggested to hypnotized patients that they can self-hypnotize away future headaches, cramps or malaise. In at least three cases such patients have developed dangerous sequelae.

Hypnosis may induce psychopathological states in the hypnotist himself. It may invoke in him fantasies of omnipotence and omniscience. Doctor Rosen, in the past seven years, states that he and his associates have been asked to see as patients never less than three hypnotist colleagues a month. Some of these have been psychotic and a number required closed ward hospitalization. Among the psychotic hypnotists were several teachers of so-called "medical-dental hypnosis."

The classified ads in our daily newspapers, as well as the telephone directory, under the heading of hypnotism list high-sounding institutes and consultants who are lay people offering to give "aid for personality, memory, mind, nerves, shyness, speech defects, insomnia, confidence; to stop smoking and drinking, relax, sleep," etc. Some of these hypnotists have been seen professionally by me in consultation for their own problems and one can question the background, training and motivation of these individuals. The state of hypnosis is not therapeutic. It is what is done under hypnosis in relation to the total problem of the patient that counts and this would include all of the medical aspects involved.

The public and medical profession is in need of protective laws similar to the Harrison Anti-Narcotic Act, Federal Pure Food and Drug Cosmetic law, and State Medical Practice laws to curb the use of hypnotism by other than qualifying persons. Already some communities in our state have taken steps to enforce Section 2141 of the California Business and Professions Code. They correctly hold that hypnotism has continued to be used with satisfying results in the practice of medicine with certain types of mental disturbances, and it is the opinion of the Board of Medical Examiners that the use of hypnotism by other than qualified persons is a dangerous procedure which might affect the health of the person involved. The public must be protected from charlatans, quacks and other unscrupulous persons.

In the past year, the C.M.A. Committee on Mental Health took note of the fact that quite a few people were advertising to the general public and the professions the fact that they are giving a course in hypnotism. These courses range from covering a period of a few hours to a few days. It was also pointed out that many medical societies and physicians are being asked to recommend a qualified hypnotist.

The committee agreed that the improper use of hypnosis can be very dangerous to some people. It was felt that the public is being misled, that unproved claims are being made, that its use is being oversimplified and many hypnotic events are being overdramatized. Further, this committee pointed out that the medical profession has a duty to inform the public and its own members about the dangers of hypnosis and the limits of its proper use. The committee recognized that it is relatively easy to learn the technique of inducing hypnosis. It was the recommendation of the committee that courses in hypnosis should be given exclusively in conjunction with recognized medical teaching institutions under the Department of Psychiatry. They took note of the comment of the A.M.A. Committee on Hypnosis that stated that courses in hypnosis should be conducted over fairly long periods of time, perhaps six months or more, in conjunction with other pre- and postgraduate training in medicine. The departments of psychiatry of the medical schools in our state have indicated a willingness to plan and provide such courses.

During the past year, the C.M.A. passed Resolution No. 37 which opposes the use of hypnosis for entertainment purposes because of the harm it may do to certain individuals, that it degrades a useful medical tool and that the C.M.A. shall encourage the introduction and passage of necessary legislation to prohibit this dangerous and improper use of hypnosis.

Wolberg,[2] in his article on Hypnotherapy which I can recommend to every physician for reading, points out how "hypnosis has never been freed from the obloquy of its superstitious origins which compromise its reputation to this day." He writes of "misguided and overenthusiastic disciples who are motivated to find phenomena in the trance state (which he uses synonymously with hypnosis) that satisfy their inner needs for the bizarre." He further states that "Hypnosis is falsely advocated

1) as a scalpel to the unconscious in an effort to effectuate a short cut psychoanalysis;
2) as a bludgeon to crush and disintegrate symptoms;
3) as a device to bring the patient into conformity with philosophical precepts and modes of living dictated by the therapist who presents himself as a model."

We return to the tenet that only by understanding the side effects and dangers of any medical discipline can it effectively and correctly be used.

REFERENCES

1. Meldman, M. J.: Personality decompensation after hypnotic symptom suppression, J.A.M.A., 173:359-361, May 28, 1960.

2. Wolberg, L. R.: American Handbook of Psychiatry, Vol. II, Chapter 73, pages 1466-1481, Basic Books.

4 POSTGRADUATE COURSES

C.M.A. ANNUAL SESSION • *April 29–May 3, 1961* • *Los Angeles*

THE CALIFORNIA MEDICAL ASSOCIATION *in cooperation with the Medical Schools of* UNIVERSITY OF SOUTHERN CALIFORNIA *and* COLLEGE OF MEDICAL EVANGELISTS, *will present four Postgraduate Courses at the time of the Annual Session in April. These courses will be clinically oriented and will include case presentations.*

Choose the course which most interests you, follow the course, and the 1961 session will send you back to your practice stimulated and refreshed.

Look for the program giving complete details which will arrive in your office in March.

• **By COLLEGE OF MEDICAL EVANGELISTS**

Clinical Neurology—9 hours

Time: Sunday, April 30, 9:00 a.m. to 12:00 noon; Monday and Tuesday, May 1 and 2, 2:00 p.m. to 5:00 p.m.

Place: White Memorial Hospital. *Fee:* $25.00

• **By UNIVERSITY OF SOUTHERN CALIFORNIA**

Uses and Limitations of Laboratory Tests—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: Los Angeles County Hospital. *Fee:* $25.00

Practical Gynecology—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: USC School of Medicine. *Fee:* $25.00

Cardiac Resuscitation—2 hours

SECTION I*—Saturday, April 29, 9:00 a.m. to 11:00 a.m.

SECTION II*—Sunday, April 30, 2:00 p.m. to 4:00 p.m.

Place: USC School of Medicine. *Fee:* $30.00

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*Each Section is all-inclusive. Each Section is limited to 15 registrants from areas other than San Francisco or Los Angeles.

APPLICATION FOR ENROLLMENT

Mail to: POSTGRADUATE ACTIVITIES, CALIFORNIA MEDICAL ASSOCIATION
2975 Wilshire Boulevard, Los Angeles 5, California

With check or money order in the amount of $______ made payable to *California Medical Association*

Name____________________

Address____________________

I am in General Practice__________ I limit my practice to__________

Medical School Attended__________ Year of Graduation__________

Please enroll me in the course indicated by ✓.

☐ 1. Clinical Neurology (9-hour course, Sunday morning; Monday and Tuesday afternoons)—$25.00

☐ 2. Uses and Limitations of Laboratory Tests (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 3. Practical Gynecology (9-hour course, Saturday, all day; Sunday morning)—$25.00

☐ 4a. Cardiac Resuscitation—Section I (2-hour course, Saturday morning)—$30.00

☐ 4b. Cardiac Resuscitation—Section II (2-hour course, Sunday afternoon)—$30.00

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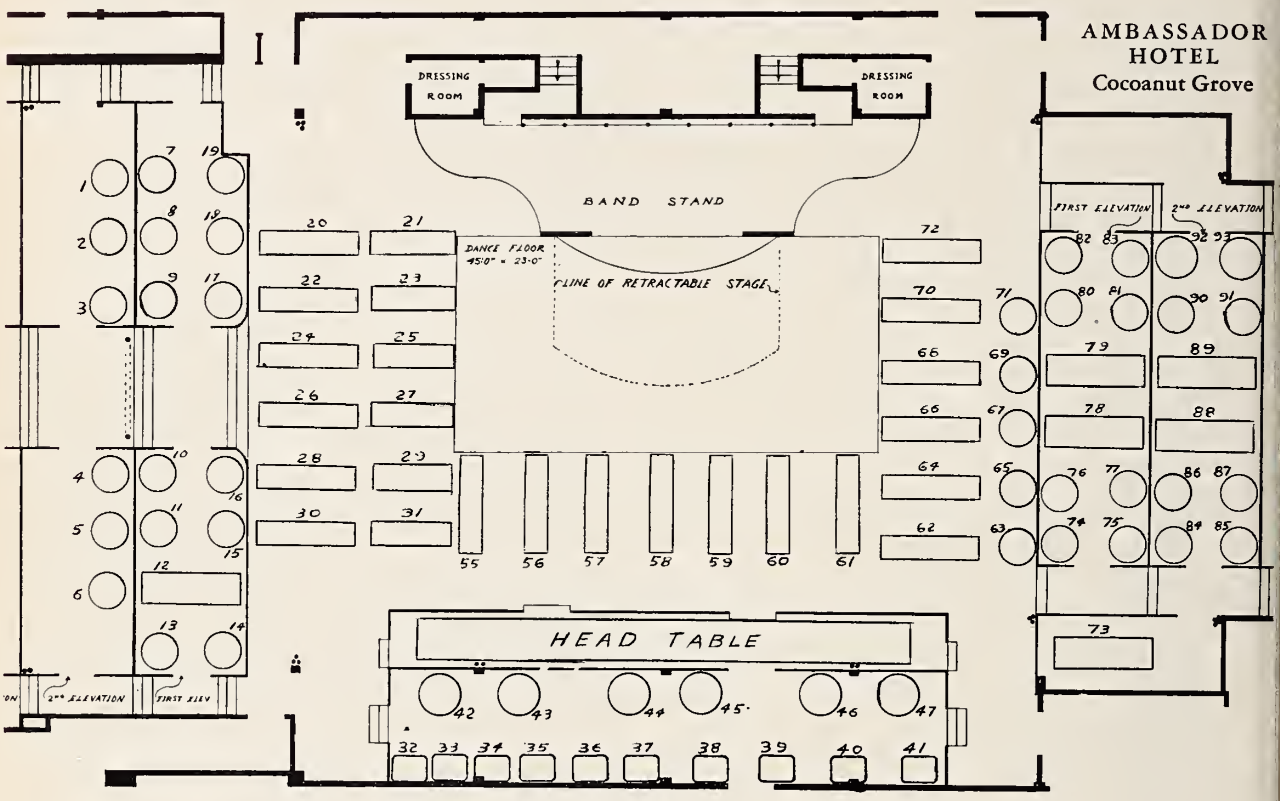

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Choose the location of your table from the floor plan above. The corresponding table number below gives the number of seats at each table. Please fill out coupon on opposite page.

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2	6	20	10	37	2	62	12	79	12
3	4	21	10	38	2	63	4	80	6
4	4	22	10	39	2	64	12	81	4
5	6	23	10	40	2	65	4	82	4
6	4	24	10	41	2	66	12	83	6
7	4	25	10	42	8	67	4	84	4
8	4	26	10	43	8	68	12	85	6
9	4	27	10	44	8	69	4	86	6
10	4	28	10	45	8	70	12	87	4
11	4	29	10	46	8	71	4	88	12
12	12	30	10	47	8	72	12	89	12
13	4	31	10	55	12	73	10	90	6
14	4	32	2	56	12	74	4	91	4
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Presidents' Dinner-Dance

SUNDAY, APRIL 30, 8 p.m.

Cocoanut Grove

Reception: EMBASSY ROOM—7 p.m. to 8 p.m.

Entertainment: Holiday in Japan
Steve Parker's Original Oriental Extravaganza from Las Vegas

Music for Dancing: Freddy Martin and His Orchestra

Food: Prime Rib Dinner

Cost: $15.00 per person including reception, tax, tip and cover

TICKETS ARE NOW ON SALE—USE COUPON BELOW

our tickets will be held for you at the oor to the Embassy Room. A receipt for our check will be sent to you. Please resent this receipt at the door for your icket, Sunday night.

OR

Tickets may be picked up at any time Sunday morning or afternoon, April 30, at ticket booth, Woman's Auxiliary registration desk. Requests for tables for large parties should be sent in one envelope and early.

MISS LOUISE KALINICH
Los Angeles County Medical Association
1925 Wilshire Boulevard
Los Angeles 57, California

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11th ANNUAL

REGIONAL POSTGRADUATE INSTITUTE

SAN JOAQUIN VALLEY COUNTIES

Presented by the California Medical Association Committee on Postgraduate Activities, in cooperation with Fresno, Madera, Kings, Tulare, Kern; Merced-Mariposa, Inyo-Mono and Stanislaus County Medical Societies and the Department of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Los Angeles, Thomas H. Sternberg, M.D., Assistant Dean, Department of Continuing Education in Medicine and Health Sciences.

Guest Speaker: JOHN M. KINNEY, M.D., Associate in Surgery, Harvard Medical School at Peter Bent Brigham Hospital, Boston.

Ahwahnee Hotel, Yosemite National Park

April 14 and 15, 1961

PROGRAM

FRIDAY, APRIL 14

Morning Meetings

THE ACUTE ABDOMEN

9:15-10:00—**Medical Aspects**—John C. Sharpe, M.D.

10:00-10:45—**Electrolyte Problems—Pre- and Postoperative**—John M. Kinney, M.D.

11:00-11:45—**Surgical Aspects**—Wiley F. Barker, M.D.

11:45-12:15—**Panel Discussion**—Wiley F. Barker, M.D., John M. Kinney, M.D., John C. Sharpe, M.D.

Afternoon Meetings

2:00-2:45—**Autoimmune Diseases**—Victor D. Newcomer, M.D., Carl M. Pearson, M.D.

2:45-3:30—**Virus Diseases—Diagnosis and Management**—John M. Adams, M.D.

3:45-5:00—**BLOOD TRANSFUSIONS:**

Uses and Abuses—Wiley F. Barker, M.D.

Problems of Multiple Transfusions—John B. Dillon, M.D.

Uses of Blood and Blood Fractions from the Los Angeles Red Cross Blood Center—Eugene P. Adashek, M.D.

ELECTIVES

2:00-2:45—**Newer Aspects of Hand Surgery**—Franklin L. Ashley, M.D.

2:45-3:30—**Recurrent Abdominal Pain in Children**—Harry F. Dietrich, M.D.

7:00-8:00—**"No-Host" Cocktail Party.**

8:00—**Dinner-Dance.**

SATURDAY, APRIL 15

Morning Meetings

MANAGEMENT OF TRAUMA

9:15-9:55—**General Principles**—Wiley F. Barker, M.D.

9:55-10:35—**Resuscitation**—John B. Dillon, M.D.

10:50-11:30—**Maxillo-Facial Injuries**—Franklin L. Ashley, M.D.

11:30-12:15—**Panel Discussion**—Moderator: Wiley F. Barker, M.D.; Panel: Franklin L. Ashley, M.D., Eugene P. Adashek, M.D., John B. Dillon, M.D., John M. Kinney, M.D.

ELECTIVES

10:50-11:30—**Laboratory Tests Useful in Rheumatoid Disease**—Carl M. Pearson, M.D.

11:30-12:15—**Current Status of Treatment of Fungi**—Victor Newcomer, M.D.

Afternoon Meetings

2:00-2:45—**Diagnostic and Immunization Procedures in Childhood**—John M. Adams, M.D., Harry F. Dietrich, M.D.

3:00-3:45—**What Is an Adequate Physical Examination**—John C. Sharpe, M.D.

3:45-5:00—**Skin Tumor Clinic**—Franklin L. Ashley, M.D., Victor D. Newcomer, M.D.

ELECTIVE

2:00-2:45—**Medical Diseases of the Back**—Carl M. Pearson, M.D.

HOST: Fresno County Medical Society . . . **REGIONAL CHAIRMAN:** J. Malcolm Masten, M.D., 1051 R Street, Fresno, California . . . **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

In Memoriam

BAIRD, BERNARD. Died in San Francisco, February 17, 1961, aged 49, of heart disease. Graduate of the University of Tennessee College of Medicine, Memphis, 1944. Licensed in California in 1946. Doctor Baird was a member of the Mendocino-Lake County Medical Society.

✣

BRAINARD, FOREST JOHN. Died February 13, 1961, aged 71. Graduate of State University of New York College of Medicine, Syracuse, New York, 1916. Licensed in California in 1938. Doctor Brainard was a member of the Los Angeles County Medical Association.

✣

DOLLEY, FRANK STEPHEN. Died in Los Angeles, February 25, 1961, aged 76. Graduate of Bowdoin Medical School, Brunswick-Portland, Maine, 1911. Licensed in California in 1914. Doctor Dolley was a member of the Los Angeles County Medical Association.

✣

ERIKSON, GEORGE V. Died January 12, 1961, aged 49. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1948. Licensed in California in 1948. Doctor Erikson was a member of the Los Angeles County Medical Association.

✣

FARRINGTON, E. DWIGHT. Died March 2, 1961, aged 66. Graduate of University of California School of Medicine, Berkeley-San Francisco, 1923. Licensed in California in 1923. Doctor Farrington was a member of the Los Angeles County Medical Association.

✣

GRAESER, HENRIK SOFAS. Died in Sacramento, February 26, 1961, aged 52. Graduate of the University of Arkansas School of Medicine, Little Rock, 1936. Licensed in California in 1937. Doctor Graeser was a member of the Yolo County Medical Society.

✣

GULL, HYMIE ARNOLD (H. A.). Died February 10, 1961, aged 46, of cancer. Graduate of the University of Minnesota Medical School, Minneapolis, 1951. Licensed in California in 1951. Doctor Gull was a member of the San Bernardino County Medical Society.

✣

HOMMEL, WESLEY J. Died March 13, 1961, aged 75. Graduate of Milwaukee Medical College, Wisconsin, 1909. Licensed in California in 1918. Doctor Hommel was a member of the Los Angeles County Medical Association.

✣

KRAUSE, ROBERT ALPHONSE. Died March 2, 1961, aged 76. Graduate of the College of Physicians and Surgeons, Los Angeles, 1922. Licensed in California in 1922. Doctor Krause was a member of the Los Angeles County Medical Association.

LIM, KWONG. Died in San Francisco, February 5, 1961, aged 46. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1941. Licensed in California in 1941. Doctor Lim was a member of the San Francisco Medical Society.

✣

MAXWELL, ALICE FREELAND. Died in Palo Alto, March 20, 1961, aged 70, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1915. Licensed in California in 1915. Doctor Maxwell was a member of the San Francisco Medical Society.

✣

NAFFZIGER, HOWARD C. Died in San Francisco, March 21, 1961, aged 76. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1909. Licensed in California in 1909. Doctor Naffziger was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

PICKWORTH, MAX EUGENE. Died February 14, 1961, aged 53, of heart disease. Graduate of the University of Minnesota Medical School, Minneapolis, 1931. Licensed in California in 1937. Doctor Pickworth was a member of the Santa Clara County Medical Society.

✣

PORTOGALLO, HENRY SALVATORE. Died January 10, 1961, aged 70. Graduate of Rush Medical College, Chicago, Illinois, 1922. Licensed in California in 1922. Doctor Portogallo was a member of the Los Angeles County Medical Association.

✣

ROOT, ROMEO R. Died in Corona, February 26, 1961, aged 90. Graduate of the University of Illinois College of Medicine, Chicago, 1902. Licensed in California in 1906. Doctor Root was a member of the Riverside County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

SEYMOUR, ELEANOR C. Died February 12, 1961, aged 83. Graduate of the University of Southern California School of Medicine, Los Angeles, 1903. Licensed in California in 1904. Doctor Seymour was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

WILLIAMS, A. WYLLYS. Died in Inglewood, March 4, 1961, aged 64. Graduate of Northwestern University Medical School, Chicago, Illinois, 1923. Licensed in California in 1925. Doctor Williams was a member of the Los Angeles County Medical Association.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

THE DEPARTMENT'S reactivated Ad Hoc Advisory Committee on Prophylaxis of Poliomyelitis has recommended shortening of the time interval between Salk vaccine injections in order for persons to have the minimum of three injections before the early summer start of the poliomyelitis season. The group added that the same compressed schedule should be used in case of a threatening epidemic.

The interval between the first and second injections can be shortened to as little as 7 to 14 days with the third a month later. It was considered essential that at least three injections be given before the summer months, followed by a fourth inoculation a year later.

The committee strongly urged vaccination of all unprotected persons before summer, and reemphasized the increased potency of the standard Salk vaccines which have shown an effectiveness up to 95 per cent in the younger age groups.

Several recommendations were made concerning the surveillance of poliomyelitis cases during an epidemic and during the nonepidemic period. These included greater emphasis on laboratory investigation of cases and an expansion of laboratory facilities in anticipation of the future introduction of oral vaccine. It will be more important at that time than ever, said the advisors, to pursue individual case investigations and to identify prevalent strains of poliomyelitis and other enteroviruses which cause paralysis in the community.

An analysis of poliomyelitis cases in California shows a steady downward trend in the number of paralytic cases in recent years. The majority of cases now occur in the unvaccinated persons. The fact that there remains a substantial number of cases is largely a failure to reach the nonimmunized population. It is not a failure of the vaccine.

The effectiveness of poliomyelitis vaccine is substantiated by the laboratory findings. The laboratory has been able to show evidence of poliomyelitis infection by virus isolation in a high proportion of persons who have had either no vaccine or an inadequate number of doses. Conversely, in persons who have received three or more injections of Salk vaccine one is less likely to find definitive evidence of poliomyelitis infection by virus isolation. A higher proportion of the fully vaccinated persons show evidence of infection with other enteroviruses. On both epidemiological and laboratory grounds, therefore, it can be shown that Salk vaccine is and has been a highly effective tool to combat poliomyelitis.

Considered in detail was the anticipated use of oral vaccine. It was reported that the oral vaccine will not be available in any quantity in 1961, or perhaps even in the following year. The committee recommended that staff of the State Health Department work out a plan to cooperate with the U. S. Public Health Service for the use of oral vaccine in the face of an epidemic. This relates to a proposal by the National Advisory Committee that the Public Health Service have a reserve of vaccine available for such use throughout the country.

Some committee members felt that experimental use of vaccine in California before its being licensed should be encouraged for research purposes by competent investigators. It was agreed, however, that the State Health Department should have knowledge of, and approve, any such research use of live poliomyelitis vaccine, and that any such proposals be discussed in advance by the advisory group. The committee felt it would not be advisable at present to utilize oral vaccine in limited areas for certain population groups before its becoming a licensed product, but that it would be preferable to concentrate on well-controlled studies to supplement research now in progress in other parts of the country.

The committee recommended intensification of the use of Salk poliomyelitis vaccine, stressed its effectiveness and made a strong plea for use of this vaccine to its fullest before the coming poliomyelitis season.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Summing Up

Now that my year as President of the Woman's Auxiliary to the California Medical Association is rapidly drawing to a conclusion, there comes the traditional time for assessing or "summing up" the year's activities. Permit me, then, in this article, to summarize briefly and partially the record—incomplete as it is—to date.

Two important committees were formed this year, one on the Problems of the Aging, the other the Woman's Auxiliary to the Students' American Medical Association. The committee on the Problems of the Aging has been and continues to be in the spotlight on medical legislative affairs. In time, we hope to see the results of the work of this committee through its program of educating the nonprofessional people in our communities.

The Woman's Auxiliary-Students' American Medical Association Committee has progressed beautifully and has exhibited great enthusiasm. It is really exciting and refreshing to be of assistance to such eager, intelligent young people—our future members—who are so eager to absorb every bit of information that the Woman's Auxiliary to the California Medical Association can give them. This, I am sure, will make for better informed and helpful doctors' wives.

While these two new committees are important, the attention they have been given has not detracted from the work of many another active committee. Progress has indeed been made in all the committees' activities.

The American Medical Education Foundation committee is continuing its work throughout the state with many new ideas for raising monies for this very important project. The Christmas Card idea,* originated by the Orange County Auxiliary, has been adopted by many counties this past year. Silent auctions and proceeds from county social affairs have also become popular as a means of raising monies. This should be a banner year for this committee.

As you can well surmise, the Legislation chairman was certainly most active and busy, since this was an election year. The chairman assisted the medical profession in the promotion of legislation beneficial to us and kept the auxiliaries informed on legislative matters by means of letters and many talks.

The Health Careers Committee has broadened its objectives to include recruitment not only of nurses, but of persons in fields closely allied with medicine, such as medical technologists and physical therapists. The Health Careers Conference Day Program, instigated by the San Diego Auxiliary, is being adopted by many of the counties.

At the suggestion of the President of the California Medical Association, Dr. Paul D. Foster, a new plan for county visits has been adopted this year. This plan provides that the President of the Auxiliary will visit those counties in the southern part of the state, while the President-elect visits the northern counties. Since I had already completed the majority of my visits to the northern counties before this plan was adopted, it could not be completely implemented. At any rate, Mrs. Lawrence Custer, the President-elect, did visit three of the northern counties. This plan, I am sure, is a progressive and practical one and should prove beneficial both to the members and as a "training ground" for the President-elect.

I am most pleased and delighted to announce that the Auxiliary now has a home of its own—an office in the California Medical Association building in San Francisco. My very sincere thanks and appreciation to the California Medical Association. We love you for this!

This, then, is a partial review of the activities of your Auxiliary during the past year. At this time, space does not permit a complete review of all of the activities of the many other committees and the wonderful work they have done. Suffice it to say that all of the committees (Membership, Program, Community Service, GEMS, to mention but a few) have performed outstanding jobs. I am deeply grateful.

I am most grateful for the many courtesies extended to me at all of my visits not only by the auxiliaries, but also by the members of the California Medical Association. A sincere thanks to those counties that had combined meetings, and to the counties who changed their regular meeting dates to accommodate me. I am most appreciative! It has been a privilege to have the opportunity to meet the members personally and to witness the excellent work being done at the county level. It has been a most stimulating and inspiring experience. I left the counties with the impression that I had gained much more than I had contributed. Not only were the meetings inspiring, but it made me so proud and pleased to witness the friendliness and cooperation that existed between the members of the auxiliaries, and between the auxiliaries and their parent organizations—the County Medical Societies. This spirit of friendship is one of the objectives of the Auxiliary.

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*Names of A.M.E.F. contributors appear on a Christmas card and each member of the county medical society receives one of the cards. Many hours of tedious addressing are saved and money is made available for a most worthwhile cause—the A.M.E.F.

The year has passed all too quickly—not alone for me, but I am sure for all the officers. An Auxiliary year is not something you can see—it is that intangible "something" that one experiences and "feels" through participation. An Auxiliary year means, amongst so very many other things, community service through leadership, friendliness, new information learned and passed on, and participation in the many Auxiliary projects. As our size has increased, our committees, our objectives, our activities and our responsibilities have mounted.

While much has been accomplished, there remains so very much to be done; while new committees and new projects have been inaugurated, there remains the great task to further implement these. Certainly, nothing could have been achieved without the devotion and dedication with which the committees addressed themselves to their assignments. To the committees, to the Executive Committee, to the Board of Directors, to the California Medical Association Advisory Board, to Mr. Jack Collins and his staff, and to the membership at large, I now pay my respects, my appreciation and my thanks for many jobs so well done.

Now I feel secure in the knowledge that the stewardship of your Auxiliary will be in good hands in the future. Your officers, whoever they may be, and your Board of Directors are devoted and dedicated Auxiliary members who will work diligently and conscientiously and give generously of their time and effort.

Mrs. Samuel Gendel
President, Woman's Auxiliary to the California Medical Association

AUXILIARY'S PROGRAM OF ENTERTAINMENT

Exciting plans are in the offing for the members and delegates attending the 31st C.M.A. Auxiliary Convention in Los Angeles on April 30, May 1 and 2, 1961. Under the capable chairmanship of Mrs. Samuel K. Bacon, and co-chairman Mrs. Albert F. Stelhorn, the committee has made arrangements to insure that everyone is made welcome. The hospitality center where conventioners may rest and have a cup of coffee or a chat with a friend will again be available.

On Sunday evening, April 30, in the Cocoanut Grove, an excellent dinner, entertainment, and dancing to music by Freddy Martin and his Orchestra will be provided at the C.M.A. Presidents' Party in honor of Dr. Paul D. Foster, C.M.A. President, and Mrs. Samuel Gendel, president of C.M.A. Auxiliary.

Climaxing the busy convention schedule will be the annual luncheon honoring our new state president, Mrs. Lawrence Custer of San Francisco. Harp music will fill the air during luncheon to provide background music for informal modeling by the Auxiliary's own glamour girls. Highlighting the affair and carrying out the theme will be special entertainment by Mr. John Raitt, star of stage, screen, television and concert.

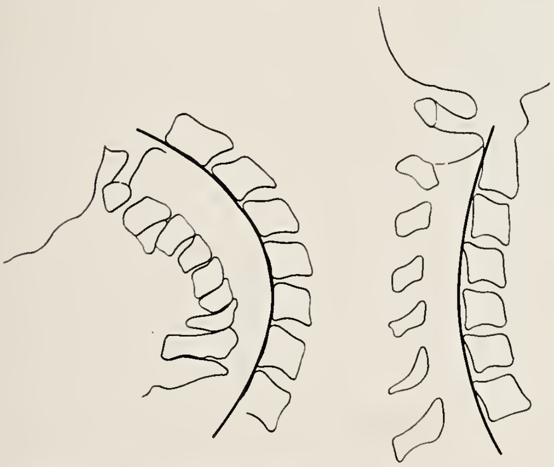
Mrs. Samuel Gendel, retiring state president, will preside at the luncheon and special guests will be A.M.A. President E. Vincent Askey and Mrs. Askey, past presidents of the Auxiliary and members of the State Advisory Board and their wives: Dr. and Mrs. Paul D. Foster, Dr. and Mrs. Warren Bostick, Dr. and Mrs. M. N. Hosmer, Dr. and Mrs. Samuel R. Sherman, and Dr. and Mrs. Malcolm C. Todd.

Reservations for the luncheon ($5.50 per person) may be made through Mrs. Jack W. Bills, 6535 Langdon Ave., Van Nuys. Checks may be made payable to C.M.A. Auxiliary.

Letters to the Editor...

In my article "Cineradiographic Studies of the Normal Cervical Spine," which appeared in the November 1960 issue of California Medicine, Figure 2 diagraming the curve produced along the posterior aspect of the vertebral bodies in flexion and extension has been criticized by some readers. The offset which normally occurs between the vertebral bodies in flexion was not represented in the diagram.

The two diagrams here supplied demonstrate this offset as it occurs in flexion and in extension.



Left: Smooth curve derived along the posterior aspects of the cervical vertebral bodies in extension, demonstrating a minimal offset of one vertebral body on the other. *Right:* Moderate offset of the vertebral bodies of the cervical spine in flexion in the normal individual. Smooth curve is derived along high points of the vertebral bodies.

The criticisms have related to the misinterpretation of such offset in the normal individual as indicative of subluxation. The curve which is derived along the posterior aspect of the bodies can be observed to be drawn from the highest points of the vertebral bodies.

Malcolm D. Jones, M.D.

San Francisco

"C.P.S.-Blue Shield"

The well written Editorial on "C.P.S.—Blue Shield" appearing in your January issue is noted. The author is to be commended for his candor in writing ". . . we find C.P.S. beset with a number of problems which a knowledgeable observer might have expected to see solved some years back." But then, alas these problems are lightly glossed over with the sentence "Details need not be gone into here. . . ."

Lest the Journal present only one side of the question, I believe it would be fair to note some of these problems, with which many are not familiar. As a founder-member of C.P.S. and as a former secretary of the California Medical Association, I believe I can speak with some knowledge of the circumstances:

1. C.P.S. was organized in 1939 to provide a sickness service physician prepayment mechanism for low income groups.

It exists because of:

(a) A continuous *subsidy* by the medical profession via service-plan benefits (indemnity-plan benefits would be better for all concerned, but would be hard to sell in competition with regular insurance companies), and

(b) A continuous *subsidy* by the public.

C.P.S. originally was planned to provide *medical benefits* only—California Blue Cross was supposed to provide necessary *hospital* benefits. But friction concerning promotion, costs and personnel prevented such sensible joint effort.

Now C.P.S. sells both medical and hospital coverage, and administers various federal and state plans, conducting a total annual business of about $57,000,000! And it is no longer confined to low income groups.

2. Certain portions of the C.P.S. schedule pay, and have for many years paid, for services not rendered. Other portions are administered in a most unequal manner, disparate fees being paid for identical services depending upon whether they are performed in hospital buildings or medical buildings.

3. Portions of the 1939 schedule have been increased only about 25 per cent since that time. Even the most casual observer will admit that medical costs have increased more than 25 per cent in the twenty-two year period. Correction would seem to be long overdue.

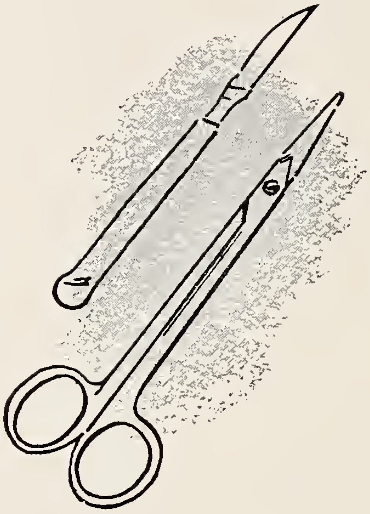
4. Many questions are unanswered.

Should we, the medical profession, be in the multimillion dollar insurance business or should we stick to our professional last? It seems to me that a good point can be made for a pilot or model program in sickness service prepayment fields, but I suspect that many of our members doubt the wisdom of the profession being in competition with the insurance industry.

Is this one of the reasons why only 14,500 physicians out of the more than 22,000 licensed physicians in the state are members of C.P.S.?

Would cooperation be better than competition? The California Medical Association represents organized medicine in this state; the voluntary health insurance agencies doubtless have, or can be encouraged to have, an organization too. Cooperation between the medical profession and the insurance industry on a statewide basis should lead to the more constructive evolution of sound indemnity-type programs for a majority of the citizens. Service type programs could and should be made available to those for whom C.P.S. was originally founded, the lower income groups, and certain other deserving persons irrespective of age.

L. H. Garland, M.D.



INFORMATION

Control of Cancer Quackery

The 1959 California Legislature, in Senate Bill No. 194, gave the Department of Public Health responsibility for the enforcement of a program to protect the public from unorthodox or unproven methods for the diagnosis, treatment or cure of cancer.

To assist and advise the department, this antiquackery law authorized gubernatorial appointment of a 15-member Cancer Advisory Council consisting of nine physicians and surgeons, two representatives from cancer research institutes, three others who are not physicians and surgeons and the Director of the Department of Public Health. At the first meeting in January, 1960, John W. Cline, M.D., was elected chairman of the council for the ensuing year.

The legislation requires anyone offering an agent for the diagnosis or treatment of cancer to furnish samples, on demand, for investigation or testing by the department. When it is established by scientific and legal processes that this agent is misrepresented or ineffective, the department may order that its use be discontinued. If this order is not complied with, under certain other circumstances, the department may prosecute.

Within the Department of Public Health a Cancer Diagnosis and Therapy Evaluation Unit has been established to furnish staff service to the council and to carry on the antiquackery program. This unit is staffed by K. F. Ernst, M.D., as head, Mr. J. Richard Jackson as field representative and a secretary. During the year this unit has been in existence, one clinic and one remedy have been investigated and further action by the Attorney General is now awaited.

The department has received pledges of support from the deans of all the schools of medicine in California, some individual physicians and other scientists, State Boards of Examiners and other groups. Support of all practicing physicians and of all agencies in the state is needed and is earnestly solicited. This support may take any or all of the following forms:

(a) Whenever patients who have had treatment with unproven methods come to the attention of any physician, society, bureau or other agency, the Cancer Unit in the Department of Public Health should be notified and preliminary arrangements made for an interview. The patients should be asked to retain any letters, advertising or medicines they may have received in connection with the treatment.

(b) Historical notes to record methods of diagnosis, claims and details of treatment, name of the treatment and of the clinic or individual offering it and the cost of the treatment should be made while still fresh in the patient's mind. If it is suspected that the diagnosis of cancer is false, diagnostic studies to confirm the diagnosis or to show that it is incorrect should be performed.

(c) Objective findings for comparison with those before treatment, if known by the physician or stated by the patient, should be recorded.

(d) Autopsies on patients who die after treatment with unproven methods should be encouraged.

(e) Notification may be made by mail to the Cancer Unit, State Department of Public Health, 2151 Berkeley Way, Berkeley 4, or by telephone to THornwall 3-7900, Extension 321.

Factual or opinion testimony by physicians or other scientists regarding physical findings or the efficacy of a given remedy is of tremendous value when a case is being considered before a hearing officer.

$317,000 Settlement in Malpractice Case

On December 22, 1960, there was announced perhaps the largest settlement made in a malpractice case. After three weeks of trial, the case against a surgeon, two anesthesiologists and a hospital was settled for $317,000. (*Carvainis v. Montefiore Hospital for Chronic Diseases,* Supreme Court. N. Y. County, Index No. 11907-1957, Calendar No. 21461.)

The plaintiff was a 49-year-old housewife, the mother of four children. She entered the defendant hospital April 4, 1956, for a vaginoplasty. A spinal anesthesia was administered. Because the patient was decidedly obese, the lithotomy position was indicated. Evidence was produced at the trial along the following lines:

An excessive dose of anesthetic agent was administered; an unexplained very high level of insertion at T-10 was made. The operating table did not function until after it had been pushed, jerked, jostled and vigorously shaken in order to put it in the Fowler's position and to release the drop leaf. Each and every element would cause the anesthetic level to rise to an abnormally and undesired high level.

Respiratory difficulties arose, with a secondary cardiac arrest, and a thoractomy with heart massage was done. Although the heart responded after two or three squeezes, spontaneous respiration did not return for an hour. The patient suffered anoxia, and although partially recovered, she is unable to walk without assistance, unable to dress, undress, bathe, wash herself or comb her hair. She can feed herself partially but has to be prodded to continue eating. She is incontinent of bowel and bladder unless these needs are attended to every three hours, day and night. She speaks slowly, haltingly, unresponsively and without intelligence or intellectual content. She has no memory, no human motivation, is emotionally insulated and unresponsive, and is without spirit or compassion. These conditions are irreversible.

Notes on Medical Liability

Medical Staff Rule Requiring Adequate Professional Liability Insurance

THE Joint Medicolegal Education Committee of the California Medical Association and the California Hospital Association has learned of many instances in which some members of a hospital medical staff carried inadequate professional liability insurance or none at all.

Medical staff organization was developed in the public interest in order for physicians to further their professional training, to assure each other of highly competent colleagues for consultation, and to better administer and discipline the medical care being rendered in a hospital, for which they are responsible.

Many medical and surgical procedures performed in a hospital call for the combined professional skills of several physicians. Each physician should be assured not only of the training and competence of all others, but also that his colleagues have in force adequate professional liability insurance. The welfare of your patients in the event of injury caused by another physician, is thus better protected, as is your own estate. The point should be emphasized that the uninsured or underinsured physician is a hazard to the other physicians on the staff due to the fact that in the event a suit joins a number of physicians, an increased burden may be placed on those who are adequately insured.

Recently, a questionnaire was sent to the 789 medical staff members of two large hospitals in a metropolitan area to ascertain whether they carried malpractice insurance and what the amount of their coverage was. Replies were received from 620 members or 78 per cent. No malpractice insurance was carried by three physicians. Nineteen carried coverage up to $5,000 and 27 had $15,000 limits. Approximately 15 per cent of those responding carried $50,000 limits or less.

The C.M.A.-C.H.A. Joint Medicolegal Education Committee recommended that hospital medical staffs require that every member of the staff shall annually file an informal statement with the secretary of the staff, telling the amount of professional liability insurance he is carrying and the name of the underwriting company. This information will be reviewed by the executive committee of the staff in order that all staff members may be assured that each member has reasonably adequate professional liability insurance in force. No permanent record need be kept of this information. The executive committee shall develop, from time to time, criteria (informal), by which to measure what shall be considered reasonable, adequate limits of coverage and shall advise the members of the medical staff of their recommendations.

These proposals are made in the interest of the profession and the public. They have been approved by the C.M.A. Council.

Joint Liability of Physician Cooperating With Another Discipline

A RECENT DECISION by a California court provides a timely reason to review the matter of the joint and several legal liability of physicians when they assist other disciplines.

Before an oral surgeon who is not a physician may admit a patient to a hospital for a procedure he is qualified to perform, a physician must give the patient a physical examination. An anesthesiologist ordinarily must administer the anesthesia. In some circumstances, the negligence of one may be shared by the other. For example: Who must recognize and treat pneumonia or drug reactions?

Dental work may be required because of infection, or an infection may result from it. The treating physician, in his effort to locate the cause of an illness that may be connected with the dental work, may be required to make careful x-ray examination of the area in which the dental work was done. The dentist may also be required to take x-ray films.

The District Court of Appeals, First District, Division 2, California, in December, 1959, handed down an opinion in the case entitled "William

George v. J. E. Matthews and W. C. Nixon, 346 Pac. 2d 863," in the course of which some interesting observations were made. The plaintiff, one William George, consulted Doctor Nixon, a physician, in December, 1952, and complained of a low backache which had persisted for several years. After examination, Doctor Nixon recommended that the plaintiff see a dentist. The plaintiff saw Doctor Matthews who found him suffering from pyorrhea and recommended extraction of all his teeth. On January 16, 21 and 28, and February 6, 1953, George's teeth were extracted by Doctor Matthews. On January 29, George had a low-grade fever, rash and rapid pulse. Doctor Nixon was called and administered an injection of penicillin. On February 6 and 16, another such injection was given. On February 20, George was suffering chills, consulted Doctor Nixon and was placed in the hospital. A diagnosis of septicemia was made. X-ray films were taken of George's jaw but the films did not show the portion of the jaw where, subsequently, some broken teeth roots were observed. On March 5, George was discharged from the hospital and he also relieved Doctor Nixon of any further responsibility for his care. George consulted another doctor. On March 11, he was again placed in the hospital. A diagnosis was made of septicemia with rheumatic arthritis and staphylococcal lobar pneumonia empyema. X-ray studies disclosed broken teeth roots in the upper jaw. Following removal of the broken roots, George's temperature became normal and his chest cleared.

An action was filed by George against both Doctor Nixon, his physician, and Doctor Matthews, his dentist, for alleged incompetent treatment in the extraction of his teeth. A judgment was rendered against both defendants in the trial of the case. Doctor Nixon appealed the decision. Upon review of the testimony, the court held that there was evidence produced that by reason of the prolonged infection and fever, the plaintiff's health was permanently impaired. There was evidence that the pockets of pus in the sockets of the broken teeth roots were the chief cause of the plaintiff's trouble. There was testimony that the standard of practice in San Francisco, the locality where this took place, required that:

1. With infection in the plaintiff's mouth, his physician should have given him an antibiotic injection on the day of or day before any teeth were extracted, and
2. The physician should have had adequate x-ray films of the patient's jaw taken when he was put in the hospital to determine whether broken roots remained.

There was evidence produced that it was the duty of the physician rather than the dentist to determine whether or not an antibiotic should be employed. Based on this evidence, the court submitted this matter to the jury under proper instructions. The Court of Appeals held that the jury's verdict holding, in effect, that both the dentist and the physician had not applied the proper standard of care in this case, was supported by the evidence. Incidentally, the jury awarded damages in the amount of $55,000.

This case would seem to impose upon a physician, a joint duty to almost supervise the completeness or adequacy of another professional man's work which may be the cause of or contribute to an illness which is being treated by the physician. A physician, therefore, who would undertake to do the necessary workup for a dentist, upon which that patient could be admitted to a hospital, may be required to continue an interest in that case to insure that side effects do not occur which are outside the professional competence of the dentist.

Physician Assisting Chiropodist

The Business and Professions Code of California, Section 2139, defines chiropody as follows:

> "Chiropody means the diagnosis, medical, surgical, mechanical, manipulative and electrical treatment of the human foot including the nonsurgical treatment of the muscles and tendons of the leg governing the functions of the foot. No chiropodist shall do any amputation or use an anesthetic other than local."

The State Board of Medical Examiners asked the attorney general two questions concerning this section:

> "1. Can Chiropodists perform any surgery on the muscles of the leg or foot?
>
> "2. Does the portion of Section 2139 beginning 'Chiropody means the diagnosis, medical, surgical, mechanical, manipulative, and electrical treatment of the human foot' mean that a Chiropodist can do any surgery on the human foot, not requiring a general anesthesia?"

The opinion of the attorney general is dated December 20, 1944, and is reported in 4 Opinions Attorney General 386. The attorney general, in the course of the opinion, ruled it to be his opinion that this legislation indicated that as to "the foot itself, surgical treatment was contemplated or permitted and that when the Legislature permitted treatment of the muscles and tendons of the leg governing the functions of the foot, it believed that it was necessary to limit the treatment of such enlarged area to nonsurgical treatment." The attorney general stated that "Chiropodists may perform surgery on the foot, not involving amputation." He may not perform surgery on the muscles of the leg which govern the functions of the foot. The attorney general further stated: "We do not consider that the type of anesthetic has any relation to the extent or type of surgery that may be performed. . . . What surgery would amount to amputation, or what amount or type of anesthetic would be local, is a technical question of fact which must be determined by a person skilled in the art."

Should an anesthesiologist be called to assist a chiropodist who surgically treats a patient's foot, the anesthesiologist, since he is a physician, might well be held responsible to treat the side effects resulting from the surgical treatment or the use of drugs which are beyond the competence of the chiropodist.

Chiropodists Not Eligible for District Hospital Staff Membership

California Attorney General's Opinion No. 59-318, dated May 6, 1960, ruled:

> "Chiropodists may not be admitted to membership on the medical staff of a local hospital district under the present legislation."

The attorney general's opinion was sought by an assemblyman.

After carefully reviewing the various statutes, the attorney general concluded that:

> "Membership in the medical staff of a local hospital district is limited to physicians and surgeons and dentists."

It would appear that for a chiropodist to surgically treat a foot in a district hospital, the patient would need to be admitted by a staff physician. That physician would probably be held responsible for the medical needs of the patient arising outside the competence of the chiropodist.

Fortunately, problems of the nature discussed here do not arise with great frequency. But the inter-relationship between physicians and other disciplines is most necessary, important and frequent. An understanding of potential problems tends to decrease them.

Keep on TALKING
And LISTENING
And EAT, *too*

at the

SECOND GENERAL MEETING
C.M.A. ANNUAL SESSION, LOS ANGELES
MONDAY MORNING, MAY 1

Symposium on
Newer Diagnostic Methods of
Gastroenterology

The panel will consist of so many outstanding discussants that . . . . the question and answer period will carry over into the lunch hour . . . . so . . . . arrangements have been made for a

Special Luncheon

at which members of the audience who wish to may stay for a continued Question and Answer Period.

PRICE:
four dollars and six cents each

No tickets will be sold after April 25, 1961

USE COUPON BELOW FOR ORDERING TICKETS—
MAKE CHECKS PAYABLE TO AMBASSADOR HOTEL

MR. R. G. BOWMAN
Annual Session Coordinator
California Medical Association
693 Sutter Street
San Francisco 2, California

YES, I want to attend the luncheon of the General Meeting. Attached is my check for $................
($4.06 each)

Please send me....................tickets.

...., M.D.

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CITY

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

The Ninth Annual **Clifford D. Sweet Seminar**, sponsored by the medical staff of Children's Hospital of the East Bay, Oakland, will be held May 18, 19 and 20. The sessions on May 18 and 19 will be held at the Hotel Claremont in Berkeley. The third day of the pediatric seminar, May 20, will be devoted to things clinically at Children's Hospital of the East Bay.

Scheduled to give the Sweet Lecture is **Dr. Edward Pratt**, professor of pediatrics, Southwestern Medical School, University of Texas, Dallas. Dr. Pratt will speak on "Training Physicians for the Management of Behavior Disorders in Children."

Other guest speakers will include Dr. John Adams, professor of pediatrics, School of Medicine, University of California at Los Angeles, and Dr. William T. Mustard, pediatric surgeon, Toronto, Ontario, Canada.

* * *

The East Bay Rehabilitation Center for the treatment and restoration of the physically handicapped has formally opened in its new, specially designed quarters at Herrick Memorial Hospital in Berkeley. The center is the only one of its kind in northern California, attached to a modern general hospital, offering a comprehensive rehabilitation program to private patients, the official announcement said. Its purpose is to give early rehabilitation nursing care and therapy to lessen crippling after-effects and shorten length of disability for persons needing in-hospital care for conditions involving physical handicap. All medical, surgical, psychiatric and diagnostic facilities of Herrick Hospital are available to Center patients. Inpatient, outpatient and home care services are available. Patients may be admitted on referral from any responsible physician, the physician remaining in charge of the regimen for his patient.

Home care is available for patients who are unable to go to the Center for treatment. Several rate schedules exist in the Center, depending upon the program of care needed by the patient. They differentiate the acute short term patient who requires less comprehensive care from the severely disabled, long term patient who needs multiple services and frequent nursing supervision.

FRESNO

Design for Nursing in the '60's is the theme of the 1961 **California League for Nursing** convention to be held in Fresno, April 20 to 22.

Featured speakers will include Mrs. Margaret Giffen Ellsworth, former director, Department of Hospital Nursing, National League for Nursing; Dr. Robert Kroepsch, director, Western Interstate Commission on Higher Education; Arnold E. Joyal, president of Fresno State College; Neva Stevenson, consultant on practical nursing, NLN, and others.

The Student Nurses' Association of California will meet concurrently with CLN, and a joint session is planned for the afternoon of April 21, with Miss Marjorie Duvillard, R.N., director, Le Bon Secours School of Nursing, Geneva, Switzerland, discussing "Nursing in the World Community."

LOS ANGELES

Dr. Kenneth Sutherland has been given temporary appointment as Los Angeles County health officer by the Board of Supervisors. He began serving April 10, succeeding Dr. Roy O. Gilbert, who retired. Dr. Sutherland was once health officer of Orange County.

* * *

Dr. Paul D. Foster, president of the California Medical Association, was named Alumnus of the Year by graduates of the College of Medical Evangelists School of Medicine and was honored at a banquet last month by some one thousand physicians.

NAPA

The **Third Invitational Conference on Mental Disease** will be held at Napa State Hospital, Imola, California, May 20, 1961. The symposium will deal particularly with "Social Factors in Mental Disease." In the morning, there will be a discussion of the "Social Factors and the Hospital," and in the afternoon "Family Factors in Mental Illness."

Admission to the symposium is by invitation only. Further information may be obtained from Dr. David C. Wilson, Napa State Hospital, Imola, California.

SAN FRANCISCO

Opening of a western **office in San Francisco** to stimulate improvement of nursing education and nursing service in the region, has been announced by the **National League for Nursing.**

Mrs. Irene B. Miller, of New York, former director of the League's nurse recruitment program, will be director of the Western office. She had also been the agency's nurse recruitment field consultant in the region.

SANTA CLARA

Dr. David A. Hamburg, chief of the adult psychiatry branch of the National Institutes of Health, Bethesda, Maryland, has been appointed professor and executive head of the Stanford Medical School's department of psychiatry. He will assume his duties there next August 1. He succeeds Dr. Thomas A. Gonda, acting head of the department, who will be on sabbatical leave at Oxford University next year.

GENERAL

To make it possible for distinguished university professors to continue **research activities after arbitrary retirement** age, the Easter Seal Research Foundation has set up a system of awards to be known as Distinguished Service Awards for Professors Emeriti.

As stated by the Foundation's announcement, the new awards are intended "to encourage and facilitate continued research in the field of crippling by retired university professors who have demonstrated distinguished research competence prior to retirement."

First recipient of one of the awards is the noted obstetrician, Nicholson J. Eastman, M.D., of Johns Hopkins University, Baltimore, Md., who for two years will continue his study of the obstetrical background of cerebral palsy under the Easter Seal grant.

Awards will be made only to retired full professors who devote substantial time to research and who will have a continuing research opportunity in a university or other major research facility.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

STANFORD UNIVERSITY SCHOOL OF MEDICINE, PALO ALTO

Acute Myocardial Infarction. Saturday, May 13, 8:00 a.m. to 5:00 p.m. *For information contact:* Lowell A. Rantz, M.D., associate dean, Stanford Medical Center, Palo Alto.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through 28. Thirty-two hours. Fee: $200.00.

Management of Trauma—Harbor Hospital. Friday and Saturday, May 19 and 20. Nine hours.*

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Office Surgery. Saturday and Sunday, June 17 and 18.†

Dermatology in Clinical Practice. Tuesday, July 11. Six hours. Fee: $20.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Endocrinology. Friday and Saturday, August 4 and 5.†

Advanced Seminars in Internal Medicine. Sunday through Wednesday, August 6 through 9. University Conference Center, Lake Arrowhead. Fee: $137.50 (includes room and meals).

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

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*Fee to be announced.
†Hours and fees to be announced.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

General Surgery. Thursday and Friday, April 20 and 21. Fifteen hours. Fee: $50.00.

Ear-Nose-Throat. Thursday through Saturday, May 11 through 13. Twenty-one hours.*

Proctology. Thursday and Friday, May 18 and 19. Fourteen hours.*

Gastroenterology. Friday and Saturday, May 26 and 27. Fourteen hours.*

Eye Muscle. Thursday through Saturday, June 1-3. Twenty-one hours.*

Electrocardiography. Friday and Saturday, June 9 and 10. Fifteen hours.*

A Course in Psychiatry for Physicians in General Practice. Thursday through Saturday, June 15-17. Twenty-one hours.*

Cerebral Palsy. Thursday and Friday, June 29 and 30. Fourteen hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Conference on Strabismus. Wednesday through Friday. July 26 through 28. Limited enrollment. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center. Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Surgical Anatomy (Dissection, Lectures and Demonstrations):

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Office of the Dean, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION

POSTGRADUATE COURSES (at the time of the Annual Session)

Clinical Neurology in cooperation with College of Medical Evangelists. White Memorial Hospital. Sunday, April 30, 9-12 a.m.; Monday and Tuesday, May 1 and 2, 2-5 p.m. Fee: $25.00.*

Office Gynecology in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Use and Limitations of Laboratory Tests in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Cardiac Resuscitation: in cooperation with USC School of Medicine. USC Research Building, Room 211, 2025 Zonal Avenue, Los Angeles 33. Section I: Saturday, April 29, 9 to 11 a.m.; Section II: Sunday, April 30, 2-4 p.m. (each Section is all-inclusive). Each Section is limited to 15 registrants from areas other than Los Angeles and San Francisco. Fee: $30.00, each Section.*

CALIFORNIA MEDICAL ASSOCIATION

POSTGRADUATE INSTITUTE—1961

Sacramento Valley Counties, June 30 and July 1, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

APRIL MEETINGS

Alameda County Tuberculosis, Heart and Cancer Association and the Alameda-Contra Costa Academy of General Practice Second Annual Joint Medical Symposium on "A Practical Approach to Current Clinical Problems." Wednesday, April 19, 1:45 to 5:00 p.m., Kaiser Center Auditorium, 300 Lakeside Drive, Oakland. *Contact:* J. Evans Morrison, M.D., publicity chairman, 1480 Fruitvale Avenue, Oakland.

Los Angeles County Tuberculosis and Health Association in cooperation with University of Southern California School of Education "Workshop on the Techniques of Teaching Diseases of the Chest." Saturday, April 22, all day, University of Southern California Campus, Los Angeles. *Contact:* Richard S. Gaines, staff, 1670 Beverly Boulevard, Los Angeles 26. Phone: DUnkirk 8-3401.

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

Pacific Coast Oto-Ophthalmological Society Annual Meeting. April 30-May 4. Riviera Hotel, Palm Springs. *Contact:* Al Miller, M.D., Secretary, 500 South Lucas Ave., Los Angeles 17.

MAY MEETINGS

Solano County Heart Association First Annual Postgraduate Course for Physicians, Part II. Tuesday, May 2, 8:00 to 10:00 p.m., Casa de Vallejo Hotel, Vallejo. *Contact:* A. E. Chappell, M.D., president, 630 Tennessee Street, Vallejo.

Los Angeles County Heart Association Annual Meeting, May 3, 12:00 noon to 2:00 p.m. Pacific Ballroom, Statler Hilton Hotel, Los Angeles. *Contact:* Willard J. Zinn, M.D., chairman, Professional Education Committee, 2405 W. 8th Street, Los Angeles 57.

California Conference of Local Health Officers Semi-Annual Meeting, May 4 and 5, Los Angeles. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

Hawaii Medical Association Annual Meeting. May 4-7. Honolulu, Hawaii. *Contact:* Lee McCaslin, Executive Secretary, 510 So. Beretania, Honolulu 13.

Long Beach Surgical Society, Fourth Annual Clinic Day. May 10. The Petroleum Club, 3636 Linden Ave., Long Beach. *Contact:* Robert T. Fox, M.D., secretary, 3712 Atlantic Avenue, Long Beach 7.

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*Chartered buses for Registrants will leave the Ambassador Hotel at 8:00 a.m. each morning.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS (for members and invited guests). May 10-12. Del Monte Lodge, Pebble Beach. *Contact:* William J. Engel, M.D., Secretary-Treasurer, Cleveland Clinic, 2020 E. 93rd St., Cleveland 6, Ohio.

NEVADA CHAPTER AMERICAN ACADEMY OF GENERAL PRACTICE. May 18-20, Riverside Hotel, Reno, Nevada. *Contact:* John M. Watson, Secretary, 1845 Prater Way, Sparks, Nevada.

MEDICAL STAFF OF CHILDREN'S HOSPITAL OF THE EAST BAY Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

CALIFORNIA HEART ASSOCIATION Annual Meeting and Scientific Session. May 19 through 21, Disneyland Hotel, Anaheim. *Contact:* J. Keith Thwaites, Exec. Director 1370 Mission Street, San Francisco.

AMERICAN ORTHOPAEDIC ASSOCIATION (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

AMERICAN UROLOGICAL ASSOCIATION, INC. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

MEMORIAL HOSPITAL OF LONG BEACH, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

SUMMER AND FALL MEETINGS

LOS ANGELES ACADEMY OF GENERAL PRACTICE SYMPOSIUM. Wednesday, June 7, 9:00 a.m. to 5:00 p.m., Statler Hotel, Los Angeles. *Contact:* Hammond S. Horton, M.D., 845 Foothill Boulevard, La Canada, California.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

NEVADA STATE MEDICAL ASSOCIATION 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23-26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

ST. JOHN'S HOSPITAL Postgraduate Assembly. September 14 through 16. St. John's Hospital, 1328 22nd St., Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Convention. September 17-20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

SAN FRANCISCO HEART ASSOCIATION 31st Annual Postgraduate Symposium. September 27 through 29, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 259 Geary Street, San Francisco 2.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting. September 29 through October 1. Hotel del Coronado, Coronado. *Contact:* Philip L. Pillsbury, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

LOS ANGELES COUNTY HEART ASSOCIATION Professional Symposium. October 11-12. 9 a.m.—5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 1961 Scientific Assembly. October 15-18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

ST. JUDE HOSPITAL POSTGRADUATE ASSEMBLY, Fullerton, October 22, all day beginning at 8:30 a.m. *Contact:* B. L. Tesman, M.D., St. Jude Hospital, Fullerton.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, INC., October 22 to 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

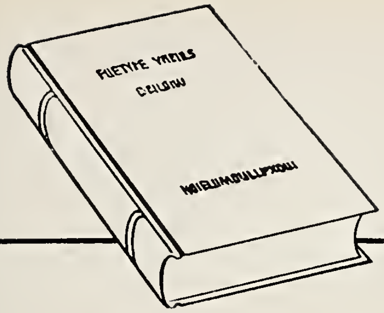
SAN DIEGO COUNTY HEART ASSOCIATION Eleventh Annual Symposium. San Diego Veterans War Memorial Building, October 27 and 28. *Contact:* O. M. Avison, executive director, 3545 Fourth Avenue, San Diego 3.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region Annual Basic Science Lecture. Statler Hilton, Los Angeles, November 1, 6:30 p.m. *Contact:* George C. Griffith, M.D., Governor, Box 25, 1200 North State Street, Los Angeles 33.

SAN DIEGO COUNTY GENERAL HOSPITAL Fifteenth Annual Postgraduate Assembly. November 1 and 2. No registration fee. *Contact:* David E. Wile, M.D., chairman, San Diego County General Hospital, San Diego.

LOS ANGELES PEDIATRIC SOCIETY (of Los Angeles County Medical Association) Annual Brennemann Lecture Series. Ambassador Hotel, Los Angeles, November 8 and 9. *Contact:* Neil N. Litman, M.D., vice-president, 9209 Sixth Avenue, Inglewood 4.

AMERICAN COLLEGE OF CHEST PHYSICIANS Seventh Annual Postgraduate Course on Diseases of the Chest, December 4 to 8, 9 to 5 daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.



THE PHYSICIAN'S *Bookshelf*

STAINING METHODS—Histologic and Histochemical—J. F. A. McManus, M.D., Professor and Chairman of Department of Pathology, University of Alabama Medical Center; and Robert W. Mowry, M.D., Professor of Pathology, University of Alabama Medical Center. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers. 49 East Thirty-Third Street, New York 16, N. Y., 1960. 423 pages, $10.00.

This is a well organized, conveniently arranged handbook which describes nearly all conventional staining methods and also a good many useful special technics based upon specific chemical reactions in tissues, such as methylation, acetylation, certain reactions for carbohydrates and proteins and a variety of procedures for enzyme identification. The selection of methods has been made with good discrimination which has eliminated methods that are not satisfactory in the experience of the authors, who have worked with histochemical methods for many years. Adequate detail is provided for successful conduct of the procedures, without going into extensive discussion of mechanisms of reactions, although comment referable to the significance and reliability of various technics is provided.

This manual should be very useful in any tissue laboratory as an assembly of effective staining methods that might be employed in staining tissue structures of all kinds and in the identification of chemical substances that are subject to ready recognition in tissue sections.

ALVIN J. COX, M.D.

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FUNDAMENTALS OF CHILD PSYCHIATRY—Stuart M. Finch, M.D., Associate Professor of Psychiatry and Director of the Children's Psychiatric Hospital, University of Michigan School of Medicine. W. W. Norton & Company, Inc., 101 Poplar Street, Scranton 9, Pa., 1960.

This is a textbook on Child Psychiatry written essentially for the beginning student of this new and rapidly expanding field. The subject matter is well organized, conforms to well established concepts in the field and is essentially conservative in dealing with psychoanalytically derived insights of personality development and psychopathology. Discussion of organic factors in etiology will provide the general practitioner and pediatrician familiar ground from which to advance their understanding. Personality development is discussed in terms of psychosexual maturation (oral, anal, phallic, latency and adolescent phases) with little integration or reference to early object relationship and ego development into this maturational pattern.

At times the subject matter is oversimplified, as for example in defining primary and secondary process on page 19. While there is ample evidence that the functioning of the ego is understood in its defensive operations, there seems little evidence that the concepts of Hartman regarding adaptive functioning of the ego or of Erickson's description of ego modes and societal modalities have been integrated.

Likewise the important work of Piaget on intellectual functioning has not made an imprint upon the author's presentation. Chapter III dealing with parental psychopathology is excellent. The sections dealing with the various descriptive categories of psychopathology as defined by the American Psychiatric Association are handled in a craftsmanship-like fashion and will be generally useful in anchoring the reader's attention to an understanding of symptoms but such structure is achieved at the expense of some oversimplification. This adherence to descriptive nosology could give the impression that there exists in child psychiatry specific entities clearly separate from one another as there are for organic diseases. I was disappointed to see no mention of the syndrome of psychogenic megacolon and school phobia, both of which are becoming more commonly recognized these days. In discussion of psychosis of children, ample reference is made to Kanner and Mahler but no reference to the oft debated work of Bender. A section on treatment and environmental manipulation is well done. A beginning resident will find much of value here. Even with the shortcomings mentioned this is one of the most useful texts available in child psychiatry.

This book will interest the medical student, parent educator, the general practioner, pediatrician and beginning psychiatric resident. A bibliography is appended.

JUSTIN D. CALL, M.D.

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MEDICAL AND BIOLOGICAL RESEARCH IN ISRAEL—Moshe Prywes, editor. Published by The Hebrew University of Jerusalem and Hadassah, The Women's Zionist Organization of America, 1960. Obtainable through Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y. (for the Americas). 562 pages, $8.00.

In this book printed in English. is presented the first survey of the medical and urologic research done in Israel.

There are 63 contributors. The achievements, as well as the many problems remaining to be solved are discussed.

The contents are divided into three parts: Part I, introduction; Part II, regional and applied research; and Part III, research of a general nature. Publications concerning both fundamental and applied research are included in this survey.

Even though Isarel is a small country with a population of approximately 2,000,000, a survey such as this one represents a very difficult task. It is emphasized that fundamental research is not a luxury, but that the higher the quality of the fundamental research the better the quality of applied research. It is anticipated that science will play a major role in the future progress of Isarel.

Some of the subjects presented in detail are as follows: Public health and applied research, plant sciences applied to agriculture, animal husbandry, industrial aspects of biological research, experimental biology, experimental and clinical research in medical disciplines, botany, zoology, and studies on the history of biology and medicine.

Anyone desiring to learn about the detailed scientific accomplishments of a young, vigorous, small country will find much of interest in this one comprehensive, concise volume.

PSYCHOLOGY OF DEAFNESS, THE—Sensory Deprivation, Learning, and Adjustment—Helmer R. Myklebust, Northwestern University. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 393 pages, $7.75.

As noted in the preface, this book is written primarily as a text for advanced courses in audiology, language pathology, special education and psychology. Any physician, however, who has one or more deaf patients in his care would do well to spend some time in perusal of this excellent summary of research on the many problems of behavior, learning and personality directly related to and commonly associated with deafness.

In the light of present knowledge sensory-neural deafness is not amenable to medical or surgical treatment. There is considerable need, therefore, for the physician directing the management of the deaf child or adult to familiarize himself with the complex processes of education and rehabilitation.

The first three chapters of Myklebust's book present a succinct review of fundamental information about the hearing process, the nature of hearing loss, and basic considerations in the measurement of hearing. Chapter 4 presents an extremely cogent, if abbreviated, discussion of the relationships between sensory deprivation and behavior.

Succeeding chapters discuss the relationships between deafness and mental development, emotional adjustment, motor functioning and social maturity; language and language development, speechreading and speech, and read and written language. The final chapters are devoted to an exploration of relationships between seeing and hearing, other handicaps frequently associated with deafness; and interests, aptitudes and special abilities.

Readers unfamiliar with the statistical argot of contemporary texts in psychology may become easily lost in several sections of the book. Myklebust has, however, followed a pattern which other writers in the psychological literature might well emulate in that each section contains a succinct summary of research findings with clear interpretations and discussion of implications for management.

The major shortcomings of the book are generally not the fault of the author, since with few exceptions they arise from the inadequacy of some of the research on which he had to depend. It is regrettable that the level of scholarship presented in the writing of this book was not practiced in the research efforts of all of the other writers presented. Nonetheless we can hope that this book will hasten the demise of many hoary half-truths and frank falsehoods which have surrounded the field of education and rehabilitation of the deaf for countless generations.

RICHARD M. FLOWER, Ph.D.

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ATLAS OF CLINICAL HEMATOLOGY—Katsuji Kato, Ph.D., M.D., Professor of Physiology (Hematology), Tokyo Medical College. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 296 pages, $25.00.

This is an excellent atlas. The various cells of the blood are superbly illustrated. Unfortunately, drawings rather than actual photographs are used. In most instances the drawings show the cells as they actually appear in blood smears but there are some cells which are not so well depicted, e.g., some of the cells in infectious mononucleosis. The author of the atlas is a proponent of the monophyletic scheme of hemocytogenesis and as such uses terminology which differs some from that used by the supporters of the polyphyletic theory. In spite of the few defects in the atlas, it is the most complete and thorough atlas of the blood with which this reviewer is familiar. It should be of considerable value as a source of reference in any laboratory in which blood cells are being studied.

JOHN S. LAWRENCE, M.D.

PROGRESS IN NEUROLOGY AND PSYCHIATRY—An Annual Review—Volume XV—Edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 619 pages, $12.75.

Volume XV of the annual review of Progress in Neurology and Psychiatry (Editor: E. A. Spiegel) again represents an attempt to abstract a massive number of publications relating to basic neurologic sciences, clinical neurology, clinical neurosurgery, and psychiatry. It is a good reference source for almost all of the current work relating to diseases and function of the nervous system, neuropharmacology, neurophysiology, and the behavioral sciences. The volume probably has major appeal to those dealing with diseases of the nervous system or those in psychiatry, but it will also be of considerable value to those interested in the impact of the newer drugs on brain and mind function as well as those interested in the neurologic aspects of many systemic diseases in children and adults. While the volume may thus enjoy a rather wide utility, it can be moderately criticized, as can all such review works, because of the failure to offer any critical evaluation of what has been abstracted and the failure to weigh discordant viewpoints which may appear on consecutive pages.

This annual review volume should be available to all practitioners of neurology and psychiatry, those working in the basic science fields related to the nervous system and behaviour, and, particularly, for trainees in any of these areas.

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PSEUDOMONAS AERUGINOSA INFECTIONS—Claude E. Forkner, Jr., M.D., Assistant in Medicine, Cornell University Medical College, New York, N. Y.; formerly, Assistant in Medicine, Harvard Medical School; formerly, Clinical Associate, General Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland. Modern Medical Monographs 22—Irving S. Wright, M.D., editor-in-chief, and Richard H. Orr, M.D., consulting editor. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1960. 104 pages, $5.25.

Based on some 465 references the author compiled a comprehensive review of available information on Pseudomonas infections. In view of the increasing frequency of Pseudomonas infections in debilitated patients receiving antineoplastic or antimicrobial therapy the review is timely, and it appears reasonably complete. Perhaps its greatest deficiency is the lack of any critical appraisal on the author's part and the lack of any specific recommendations for therapy, based on the author's own experience. It is also regrettable that in some places the author reiterates statements of the literature which must, at the present, be deemed largely misleading. Thus, for instance, he states that endocarditis caused by Pseudomonas aeruginosa "should be treated immediately with polymyxin B" although virtually the only cures of this disorder were achieved by surgical removal of the infected material or tissue. On the whole, however, this book will be valuable for any hospital library to direct physicians' attention to this formerly infrequent problem and aid them in diagnosis and treatment.

ERNEST JAWETZ, M.D.

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ARTEFACTS AND HANDLING AND PROCESSING FAULTS ON X-RAY FILMS—Prof. Dr. E. A. Zimmer, Berne, Switzerland. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 67 pages, 128 figures, $5.75.

With the increasing use of roentgenography for medical, dental, veterinary, industrial and artistic purposes, increasing appreciation of artefacts produced by handling and processing is merited. This work summarizes many common and uncommon artefacts and should be in the library of all those using roentgenographic methods extensively. The illustrations are in both black and white, and color.

OUTLINE OF PATHOLOGY—John H. Manhold, Jr., D.M.D., M.A., F.A.C.D., Professor, and Director of Oral Diagnosis and Pathology for the College of Dentistry, Seton Hall College of Medicine and Dentistry; Attending Pathologist, Jersey City Medical Center; and Theodore E. Bolden, D.D.S., M.S., Ph.D., Assistant Professor of Oral Diagnosis and Pathology, College of Dentistry, Seton Hall College of Medicine and Dentistry; and Attending Pathologist, Jersey City Medical Center. W. B. Saunders Company, Philadelphia, Pa., 1960. 340 pages, $4.75.

This small book presents the subject matter of descriptive pathology with a minimum of detail. It is written in outline form with short descriptive paragraphs under each heading. There are no illustrations or references to literature. In connection with each organ there is a short enumeration of normal structure. Although the importance of processes of disease is stressed in the first chapter, references elsewhere to functional relationships and to pathogenesis are few and are simplified to primer status, with the result that they often convey vague ideas. For example, there are statements without elaboration that "white patches" on mucous membranes have "debatable malignancy potential," "bronchial carcinoma . . . bears a peculiar, and as yet little understood, relation to the inhalation of tobacco smoke" and "pheochromocytoma . . . produces medullary hormones with accompanying clinical symptoms." There is no mention of certain rather specific morphologic features of disease, such as the presence of tubercles in regional enteritis, the characteristic gastric lesion in pernicious anemia, and the hyaline hepatic cell inclusions of Laennec cirrhosis.

The authors suggest that the book may serve as a "basis for study," and it seems possible that it might be used as a review outline or as a means of suggesting subjects for study, but otherwise the volume will add little to the library of physicians. Presentation of pathology in this way is almost certain to contribute to a misconception that this specialty has little to offer to modern medicine.

Alvin J. Cox, M.D.

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CHILD WITH MONGOLISM, THE (Congenital Acromicria)—Clemens E. Benda, M.D., Director of Research and Psychiatry, Walter E. Fernald State School, Waverly, Massachusetts; Associate Professor, Clark University, Worcester, Massachusetts; Assistant Psychiatrist, Massachusetts General Hospital, Boston; Lecturer in Pediatrics, Tufts University Medical School, Boston; Instructor in Neuropsychiatry, Harvard Medical School, Boston; Diplomate, American Board of Psychiatry and Neurology. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 276 pages, $9.50.

Since the initial description of mongolism by Down in 1866, a tremendous amount of literature has been written on this subject all over the world. Despite this, the peculiar combination of congenital anomalies that make up this syndrome has remained a puzzle to most observers. Modern cytogenetics has added a new aspect to the investigation of mongolism, but still the relationship of the symptomatology to the described chromosomal abnormalities needs a great deal more clarification. For these reasons, Dr. Benda's book is a welcome addition to the literature for people interested in the subject of mongolism.

The book is the most complete and most up-to-date review of this subject this reviewer is acquainted with. Following a historical review, there is a very detailed outline of the anatomical and physiologic changes described in children with this syndrome. In his description, Dr. Benda emphasizes especially the changes in the growth of the organs and the body of such children as they relate to a process of generalized developmental retardation. In the chapter on etiology, the information concerning genetic factors and prenatal maternal influences is carefully reviewed in detail, including a brief review of the data on the chromosomal abnormalities available in the literature at the time the book was written. In other chapters, Dr. Benda draws from his own large experience in this subject to review some of the pathophysiological data which he has supported for a number of years. Here the book loses its impact and its value, as it seems to want to carry a message across which is not always supported by the evidence offered by other authors.

For instance, Dr. Benda's findings that "mongolism is associated with a particular neuropathology which is as typical as the clinical picture itself" is not supported by studies of many other investigators. This reviewer finds it especially difficult to go along with Dr. Benda's interpretation of a basic endocrine dysfunction in mongolism. His theory is that in mongolism there is altered function of the pituitary and of its target glands (thyroid, adrenal, and gonads); pathological studies and biochemical investigations presented in the book, or available in the literature, raise significant questions to this thesis. Occasional minor pathological changes in these glands unsupported by alterations in the common laboratory tests of endocrine physiology cannot be interpreted as evidence of an abnormal status. One is especially on questionable grounds by carrying on such ideas into the field of therapy. The evidence of advantages of elaborate endocrine replacement are at least questionable. Dr. Benda recommends the use of thyroid extracts, pituitary extracts, apparently obtained from calves to be administered orally and vitamin B_{12}. This treatment he claims has a definite influence on the growth rate and probably on the mental performance. The evidence is rather weak and the rationale in the light of present day concepts of endocrine replacement therapy not acceptable (for instance, oral administration of pituitary extracts from animal sources). Other aspects of care of mongoloid children are dealt with adequately and thoroughly; for instance, the chapter on institutionalization versus home care goes along with present day concept of a comprehensive approach that takes into consideration the family and the social setting.

In summary, the book can be recommended to those interested in the subject as a rich source of information, but a very critical mind is necessary in evaluating some of the very controversial aspects of pathophysiology and treatment of these children outlined here.

Luigi Luzzatti, M.D.

* * *

CLAIMS MEDICAL MANUAL—Second Revised Edition—Packard Thurber, M.D., Packard Thurber, Jr., M.D., and others. Pacific Books, publishers, Palo Alto, Calif., 1960. 116 pages, $2.50.

In this age when a substantial number of claims for disability are being reviewed by lay people in the employ of the insurance industry, it becomes necessary for these review authorities to have some background of medical knowledge and terminology in order that they may understand what they read on the forms submitted.

The Claims Medical Manual written by Doctor Packard Thurber and his associates fills a very definite need in this category. The book is obviously not designed for use by any physician, though it is an interesting book to review. The authors are to be complimented in making a rather comprehensive and rather difficult subject matter simple in terminology and understandable.

Any physician who is in a position to have to deal with the education of any of the claims personnel of the insurance industry would do well to review this book, recognize its value and use it as a method of training.

Actually the book could be of some value in training ancillary personnel in a doctor's office in his therapy unit and in some selected categories of the hospital help. At least interested physicians should be aware of the existence of the manual and it would not be a mistake for them to review it and keep a copy in their possession, for reference.

Francis J. Cox, M.D.

DERMATOLOGY—Diagnosis and Treatment — Second Edition—Marion B. Sulzberger, M.D., F.A.C.P., Professor and Chairman, Department of Dermatology and Syphilology, New York University School of Medicine and New York University Post-Graduate Medical School; Jack Wolf, M.D., Attending Dermatologist to the Grand Central Hospital, New York, N. Y.; and Victor H. Witten, M.D., Associate Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School. With the Collaboration of Alfred W. Kopf, M.D., Assistant Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1961. 615 pages, $14.00.

This is the second edition, enlarged and modernized of a text which first appeared almost 20 years ago under the title of Dermatologic Therapy in General Practice. It previously had been revised five time in its 20-year span. In their preface the authors indicate their intent to provide medical students and physicians in all branches of medicine and surgery a practical, modern and relatively short textbook on the *recognition and management of common skin diseases.*

The text is divided into sixteen chapters and the table of contents outlines their content clearly and in some detail. The first chapter, general dermatologic management, covers 99 of the total 615 pages and is divided into three parts—principles of diagnosis, principles of topical medication and principles of other measures. The latter division discusses ionizing radiation, ultraviolet light, the use of cold, heat, electrolysis, general medical management and environmental factors. In the discussion of treatment both in this and subsequent chapters the authors have stressed the precise forms and manner of use of treatment modalities. Both the formulas of extemporaneous prescriptions and extensive lists of suitable proprietary preparations are given using their trade names. This greatly enhances the usefulness of the book. One may be critical of the increasing use of prepared medicaments but they are obviously here to stay. As in the case of prepared foods versus home cooking, often the proprietary preparation is fully the equal of the individually compounded finished product, sometimes superior to it.

A new chapter (No. 2) is devoted to the use of antibiotics, sulfonamides, corticosteroids and adrenocorticotropin in dermatology. In the rest of the book the various dermatological conditions are divided into related groups under the chapter heading of (No. 3) pruritus, (No. 4) eczematous Dermatoses, (No. 5) atopic dermatitis, (No. 6) urticaria—giant hives, (No. 7) acne vulgaris and other acneform dermatoses, (No. 8) pyodermas, (No. 9) dermatoses due to fungi, (No. 10) common tumors of the skin, (No. 11) bullous and vesicular dermatoses, (No. 12) psoriasis and seborrheic dermatitis. (No. 13) lupus erythematosus, lichen planus and pityriasis rosea, (No. 14) zoonoses (diseases due to animal parasites), (No. 15) drug eruptions, (No. 16) miscellaneous skin disorders.

The discussion of individual diseases is organized to include such features as definition, clinical appearance and pathogenesis, predisposition and susceptibility, localization and incidence, course, differential diagnosis and management. The format is not rigid, however, and, although tables and outlines are used extensively and effectively, discussion is individualized and varied to suit the problem at hand.

No doubt by intent and to keep the book within bounds some of the more unusual variants of the common dermatoses and some of the dermatological rarities are omitted from discussion.

References are few in number and inserted at the bottom of the pages.

The problem of diagnosis is in no way slighted in this book, but one cannot help but be impressed with the effort that has been devoted to aiding the student and practitioner in the *treatment* of skin diseases. From the general management of the patient to the details of topical medication the therapy of each condition is given paramount consideration.

Photographs are excellent and numerous. There are 95 figures most of which show from two to four individual photographs. There are, in addition, 12 color plates comprising 28 individual photographs. The illustrations and color plates are listed according to page at the beginning of the book. There is the usual alphabetical index at the end of the book.

I think this is an excellent text for the students and practitioners for whom it is intended. Dermatologists may also glean ideas and details of treatment found useful by the authors and their associates in the department of dermatology and syphilology of the New York University Post-Graduate Medical School and the Skin and Cancer Unit of University Hospital.

Herman V. Allington, M.D.

* * *

DISC LESIONS AND OTHER INTERVERTEBRAL DERANGEMENTS—Treated by Manipulation, Traction and Other Conservative Methods—E. J. Crisp, M.D. (Cantab.), D.Phys.Med. (Lond.), Consultant Physician Emeritus in Physical Medicine, Guy's Hospital, London. The Williams & Wilkins Company, Baltimore 2, Maryland, exclusive U. S. agents, 1960. 158 pages, $3.75.

This short, concise, easily read book should be of interest to any physician. It is divided into three parts beginning with very simple anatomy and physiology of the spine and ligamentous structures. Reading the first part makes the second part, dealing with various pathologic conditions, readily understandable. The final chapter demonstrates various types of manipulation and traction methods, which many physicians have heretofore felt belonged only to other unorthodox healers.

On the whole, this book written by a medical physiatrist, is completely conservative in its approach to the various problems. It should be remembered that in many cases manipulation and traction is definitely contraindicated, and surgery of one type or another may be the answer.

There is a definite need for this type of therapy and we, as physicians, should use it. Many painful conditions of the entire spine, correctly diagnosed, can be greatly relieved by judicious manipulation.

Edward G. Ewer, M.D.

* * *

RESUSCITATION OF THE NEWBORN INFANT—Principles and Practice—Edited by Harold Abramson, M.D., Professor of Clinical Pediatrics, New York Medical College, New York, N.Y.: Director of Maternal and Child Health Program, New York Medical College-Metropolitan Medical Center, New York, N.Y.; Visiting Pediatrician, Metropolitan Hospital, New York, N.Y.; and Chief Communicable Disease Service, Metropolitan Hospital, New York, N.Y. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1960. 274 pages, $10.00.

This is an excellent summary of what is known and not known concerning fetal and neonatal circulation and respiration, and the principles and practice of resuscitation. The 24 contributing authors are all members of the Special Committee on Infant Mortality and include Dr. Virginia Apgar, Dr. L. Stanley James, Dr. Duncan Holaday, Dr. Edwin M. Gold, Dr. David Lehr, Dr. Frank Moya, Dr. Lotte Strauss, Dr. Peter Gruenwald and many others. Their joint views have been developed into a readable text by Dr. Abramson. Individual authorship of each of the 17 chapters has not been attempted.

This book should be available to the staff of newborn nurseries and will prove of interest to obstetricians, pediatricians, anesthetists, medical students and all those concerned with the nursery care of infants. It will also interest physiologists working or teaching in the field of respiration. It is well indexed and illustrated and each chapter contains a list of comprehensive references.

William Deamer, M.D.

Report New Capstone to Puzzling Baby Disease

Physicians reported progress today in tracking down a comparatively new and puzzling baby disease, which carries the jawbreaker name, infantile cortical hyperostosis.

When it was first reported in 1945, there was a feeling in pediatric medicine that only a few babies suffered from it. Until 1952, only 100 case reports were in the literature.

The *Journal of the American Medical Association* reports, however, that the disease is so common in pediatric practice now that "only cases of unusual interest are being published."

Four Burlington, Vt., physicians reported the unusual and first experience of having observed 11 cases in one family over a 14-year period.

This, the doctors said, strongly indicates that the disease may be hereditary and that many cases exist which are being overlooked.

The four doctors are John P. Tampas, Frederick W. Van Buskirk, Oscar S. Peterson, Jr., and A. Bradley Soule, all connected with the Department of Radiology, University of Vermont College of Medicine.

They explained that clinically, the disease, which strikes infants up to nine weeks old, is characterized by soft tissue swelling over affected bones, fever,

(Continued on Page 52)

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Report New Capstone to Puzzling Baby Disease

(Continued from Page 51)

and irritability. Sometimes there is pleurisy, pseudoparalysis, and pallor. The disease seldom follows a classic or characteristic pattern.

"Laboratory data are inconstant," the doctors said. X-ray studies show that as the disease regresses, affected leg bones have a tendency to bow, but later the bowing corrects itself.. The puzzling nature of the disease, from which nearly all the young patients eventually recover completely, accounts for the *Journal's* reference to it as an "interesting enigma."

Among the 11 cases observed in a single family, the doctors said, one patient was a 25-year-old father of four children. The father suffered swollen painful extremities and bowing deformities in childhood, and the deformities persisted into adult life. All four of his children had the disease in infancy.

The Burlington physicians urged the medical profession, especially radiologists, to be on the lookout for symptoms, especially with respect to hereditary factors.

"It is suggested," they said, "that family histories of all known patients with this illness be carefully evaluated and x-rays be obtained on all parents and their children as well as other relatives with an even mildly suspicious history."

If more is learned about the disease, the doctors said, it is possible that orthopedic management could prevent skeletal abnormalities from being carried over into adult life.

Don't Use Detergents to Shampoo Hair

Detergents should not be used as a hair shampoo, according to a staff consultant of the American Medical Association.

Joseph B. Jerome, Ph.D., of the A.M.A. Committee on Cosmetics, said in the *Journal of the American Medical Association* that detergents are formulated for heavier cleaning duty than washing hair.

"Thus, while they may fall within the manufacturing tolerances they are likely to contain caustic ingredients which are irritating to the more sensitive areas of the skin," he said. "In using such products, one must always consider the possible damage not only to the hair and scalp but also to the eyes.

"With this in mind the use of commercial detergents for shampoos should be condemned. A large number of available shampoos are blander and, therefore, to be preferred."

Dr. Jerome made the statement in answer to a question sent to the *Journal* by a Connecticut physician who said some mothers had been using detergents for shampoo.

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1. Bleiberg, J.: J. Med. Soc. New Jersey, Aug. 1957.
2. Weissberg, G.: Clinical Medicine, Feb. 1958.

Anticipate Sharp Increase in Medical School Construction

A sharp rise in construction of medical school facilities is expected in 1960-61, the American Medical Association reported in its annual report on medical education.

The 1959-60 report, compiled by the A.M.A. Council on Medical Education and Hospitals and published in the November 12 A.M.A. *Journal,* also revealed that the total medical school graduating class was the largest in history while first-year enrollments remained virtually constant.

Funds committed for construction of medical school facilities in 1960-61 showed an increase of 140 per cent over the figure for the previous year, the report showed. Cost estimates of facilities completed in 1959-60 were up 35 per cent, and estimates of construction begun in 1959-60 increased by 25 per cent.

Construction planned by 42 schools for 1960-61 was estimated at $126,726,167. Construction completed by 34 schools in 1959-60 was set at $94,774,376. Construction begun by 30 schools in 1959-60 was valued at $74,144,742.

The report included a special study of the potential expansion possible by existing medical schools. The findings indicated that the present maximum enrollment for the schools was 8,188 and that if the same schools were able to expand under ideal circumstances, maximum enrollment could be boosted to 9,894.

However, the Surgeon General's Consultant Group on Medical Education has estimated a need for facilities to handle about 12,000 first-year enrollments by 1971.

This goal, the council said, "will require major changes in medical school financing and extensive and expensive facilities that will need to be constructed.

"Medical school faculties will have to be greatly augmented," it said. "Also, the available supply of well-trained and well-qualified students with enough financial backing from either private or public funds

(Continued on Page 64)

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References: 1. Spielman, A. D.: In press. 2. Schwartz, E., et al.: Am. Pract. & Digest Treat. 7:585, 1956. 3. Ogden, H. D., and Fuchs, M.: J. Louisiana M. Soc. 111:175, 1959. 4. Drill, W. A.: Pharmacology in Medicine, New York, McGraw-Hill Co., 1954, p. 41.

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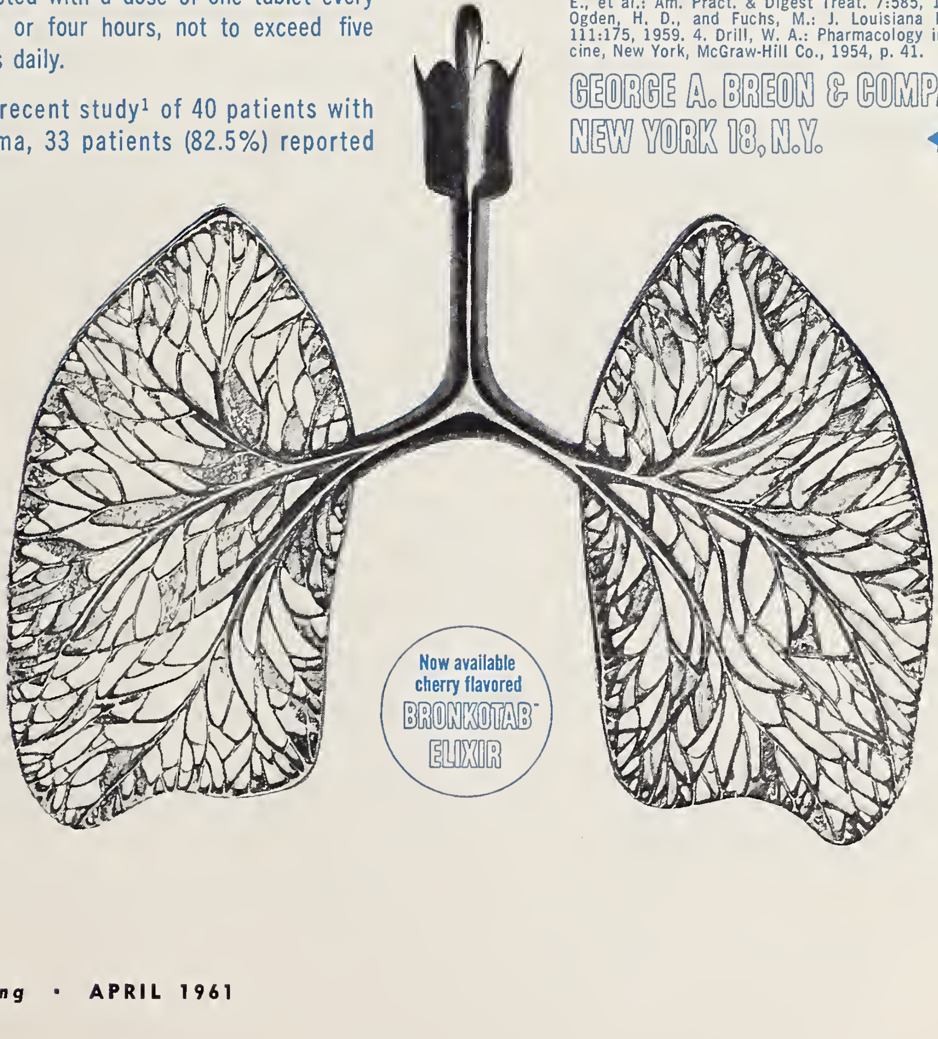

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Anticipate Sharp Increase in Medical School Construction

(Continued from Page 58)

to enable them to complete their medical training will have to be increased considerably. Finally, in addition to this necessary expansion of existing schools, it will still be necessary to establish several new medical schools in the next decade."

During 1959-60, the University of Florida College of Medicine and Dentistry graduated their first classes and were granted full approval as four-year medical schools by the A.M.A. council.

West Virginia University School of Medicine is now in the process of expansion to a full four-year program and will be eligible for approval as a four-year school in 1961-62, the council reported. The University of Kentucky College of Medicine dedicated its new facilities and matriculated its first class in September 1960.

The record number of students receiving M.D. degrees totaled 7,081, compared with 6,860 in 1958-59 and the previous record of 6,977 in 1954-55. Six schools reported increases in their graduating classes of 1959-60 of over 15 per cent—Missouri, Columbia; Albert Einstein, New York; Arkansas, Little Rock; Pittsburgh, Pittsburgh; Western Reserve, Cleveland, and North Carolina, Chapel Hill.

Women made up 5.5 per cent of the 1959-60 graduating class.

First-year enrollment for 1959-60 was 8,173, compared with 8,128 in 1958-59. However, the report pointed out that the 8,173 students represent "the largest enrollment to date in approved medical schools in the United States." The average size of entering classes was about 96 students.

Approximately two-thirds of the students entering medical schools had "B" average grades while the other third was divided equally between "A" and "C" students. This make-up showed little change from the previous year.

There also was little change in the number of students who dropped out of medical school. However, there was a decrease from 73 per cent to 57 per cent in the number who dropped out in the third and fourth years "for reasons other than academic." When all four years are considered, 39 per cent of the drop-outs are for non-academic reasons.

"A detailed study of the 'other reasons' for students leaving medical school despite good academic standing would be of interest," the council commented.

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Forced Retirement Seen Declining

Compulsory retirement of employees at age 65 is on the decline, according to the *Journal of the American Medical Association.*

"In recent years some companies, as well as the public, seem to favor a more liberal retirement policy," a *Journal* editorial said. "One reason for the change in public opinion is that more employees are in good health at 65 today than a generation ago and continue to use their experience and skill to the benefit of their employers as well as to themselves.

"The American Medical Association Committee on Aging asked labor and industry to re-evaluate their support of arbitrary retirement systems, and a sizable number of firms did liberalize their retirement programs."

The editorial quoted a statement by former A.M.A. President Louis Orr, Orlando, Fla., which said:

"There is no scientific rhyme or reason for selecting 65 as the magic number separating the productive from the non-productive, the healthy from the unhealthy. Physicians have no convenient rule of thumb definition for old age. . . .

"In America, our attitude toward the aging has undoubtedly contributed to the steadily increasing number of persons 65-and-over in mental hospitals. In Japan, a society which traditionally assigns positive assets and values to aging, mental illness actually decreases with age. . . .

"The dangers of compulsory retirement are clear and urgent."

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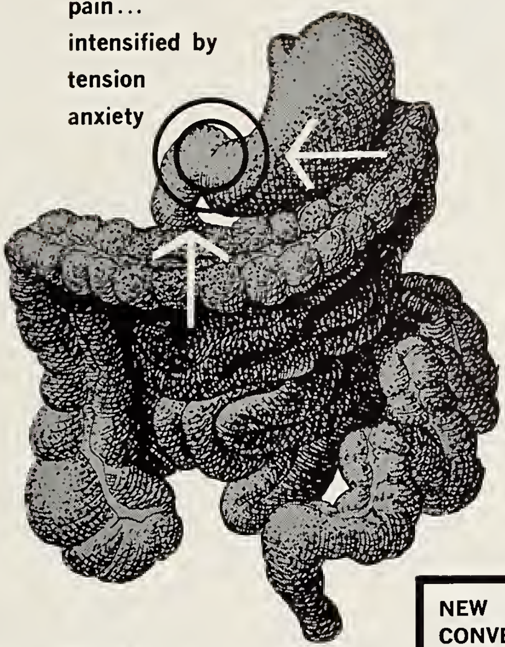

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References: 1. Hock, C. W.: Am. J. Gastroenterol. 34:293 (Sept.) 1960. 2. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 3. Data in Roerig Medical Department files.

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Civilian Protection Discussed In Germ or Gas War

As a defense against possible biological or chemical warfare, the Office of Civil and Defense Mobilization (OCDM) is planning a nationwide detection system and a program calling for mass distribution of protective masks.

Plans for protecting the civilian population against such attacks were discussed by Leo A. Hoegh, former OCDM director, in an exclusive interview with *Today's Health* magazine, published by the American Medical Association.

"Our nationwide fallout detection and monitoring network is being equipped to detect gas and germ weapons effects," Hoegh said in *Today's Health.* "This will take time and money, but the work is proceeding."

Early detection, identification, and warning systems are a major defense against chemical and biological warfare.

OCDM also is preparing for mass production of a civilian protective mask of new design which will provide easy breathing, good vision, and easy conversation, Hoegh said.

In the new mask, he said, the bulky canister used to filter out the harmful agents has been replaced by filter pads located at cheek positions.

Public distribution of the masks will be through selected retail stores at about $2.50 each, he said. They will be available in six sizes, he said.

"A public information program concerning the use of the protective masks will be timed with their retail distribution," he added.

Asked specifically about biological warfare, Hoegh said:

"The Department of Health, Education and Welfare, under OCDM delegation of authority, has initiated the program to protect the civilian population. Its major objective is education of individuals and families in self-protective measures.

"This program also includes the control and prevention of diseases resulting from BW (biological warfare) attacks; the safeguarding of our food, pharmaceutical, and water supplies; special training and education of doctors, nurses, and other professional personnel in the recognition and diagnosis of the diseases involved; rapid detection and identification of the causative agents; care, treatment, and rehabilitation of casualties, and the stockpiling of necessary emergency drugs, pharmaceuticals, equipment, and supplies."

Citizens should have all standard immunizations offered by their doctor and local health authorities, he said, and the highest priority has been given by OCDM to the research and development of immunizing agents against diseases for which no protective biologics now are available.

Although there has been much talk about biological and chemical warfare, Hoegh pointed out, "this black art hasn't yet reached the level of efficiency of nuclear war."

A recent special study for the Senate Foreign Relations Committee has described chemical and biological weaponry as "exaggerated" as to present military utility and still far from any possible use capable of strategic decisiveness, he said, although this picture may change in the next few years.

The graver dangers of nuclear war merit our more intensive efforts, he said, but we certainly are not neglecting biological and chemical warfare defense.

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Delinquents Often Object Of Parents' Conflicts

Parents who "never disagree" may express antagonisms through their children, according to an article in the October Archives of General Psychiatry.

Dr. Antonio J. Ferreira of San Jose, Calif., writing in the journal published by the American Medical Association, said this pattern of behavior is found frequently among parents of a delinquent child.

Dr. Ferreira described the case of a 15-year-old boy who "flaunted authorities," finally got into trouble with the police, and was turned over to juvenile authorities.

In interviews with the boy and his parents, the psychiatrist said he found that the father's decisions

(Continued on Page 72)

Suggest Relationship Between Thyroid and Mental Ills

A functional relationship was suggested recently between hyperthyroidism and mental disease.

Dr. Ben Bursten, Cincinnati, writing in the *Archives of General Psychiatry*, published by the American Medical Association, said:

"While the incidence of hyperthyroidism in a psychotic population is low, there are sufficient cases of psychosis in populations of thyrotoxic patients to suggest a functional relationship between the two disease processes."

Hyperthyroidism is the disease caused by an overactive thyroid gland.

There is no one particular type of psychosis characteristic of the hyperthyroid patient, Dr. Bursten said.

"Sometimes the course of the illness suggests that the thyrotoxicosis has precipitated the psychosis, and sometimes it would seem that the anxieties and activity associated with psychotic decompensation has precipitated the thyrotoxicosis," he said.

"A third possibility is that both processes may develop simultaneously as a consequence of psychodynamic shifts."

In many cases, there is probably a joint action between the two diseases, Dr. Bursten said.

"Once these processes are started, it is easy to see how they can augment each other," he said.

On the other hand, he pointed out, the two diseases do not follow parallel courses.

"This serves to emphasize that even though the two processes may be functionally related, many other etiological factors are involved, and while one process may precipitate the other, it is not necessary for the elaboration or continuation of the symptoms of the other process."

Dr. Bursten based his conclusions on data gathered at Edward J. Meyer Hospital, Buffalo, N. Y., a county general hospital with a large psychiatric unit.

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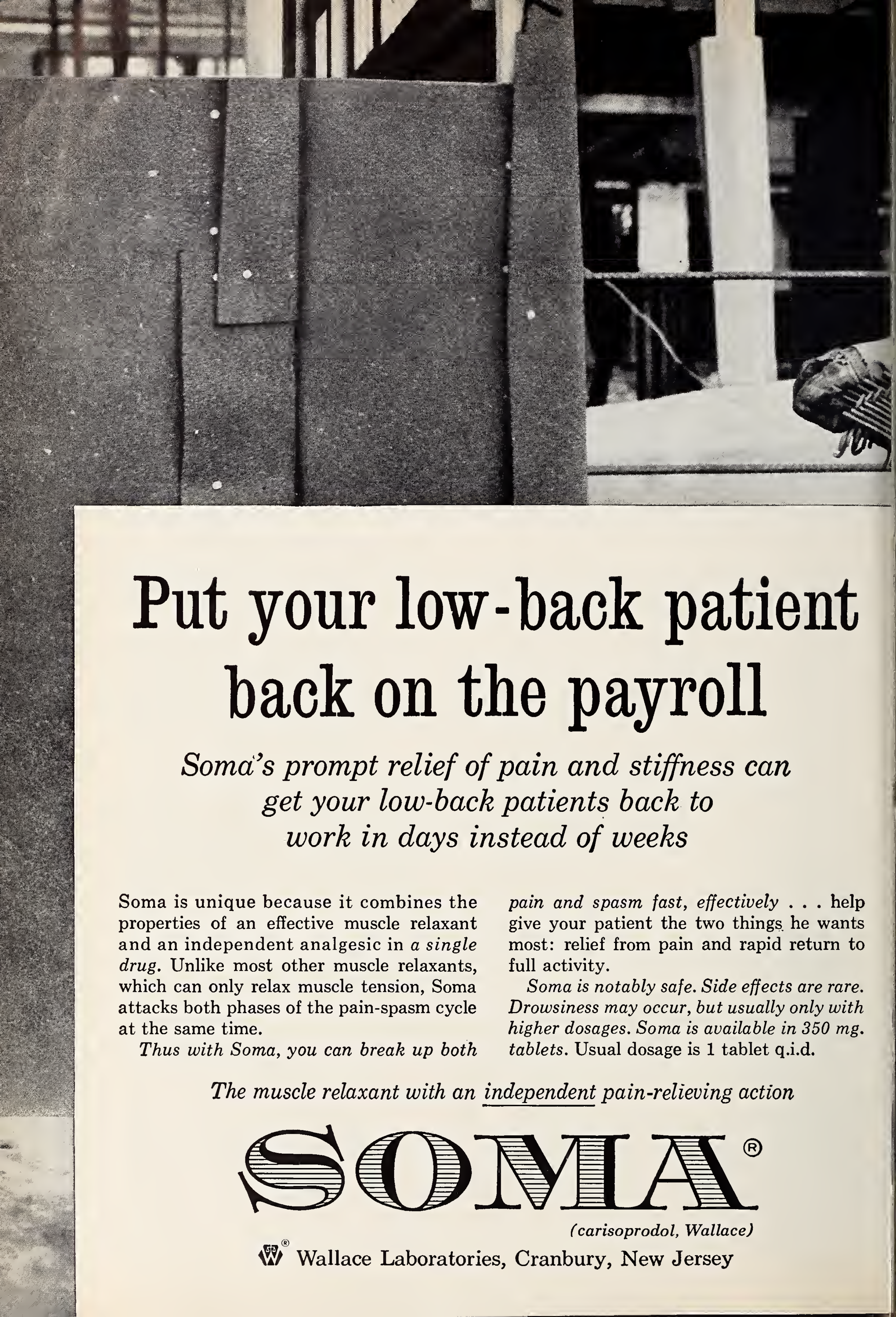

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New Film on Alcohol Detection

Alcohol is involved in half of all traffic accidents which result in injury or death, but there is hope for greater highway safety through scientific tests for drunkenness which are acceptable in court.

This was brought out as experts from the fields of medicine and the law discussed the problem of the drinking driver at the showing of a new motion picture, "The Silent Witness," in Cincinnati.

The film was produced by The Wm. S. Merrell Company (Division of Richardson-Merrell Inc.) in cooperation with the American Medical Association and the American Bar Association. It deals with the chemical tests for intoxication and is the sixth in a series of Merrell-American Medical Association films on medicolegal subjects.

The movie was shown before approximately 140 doctors, lawyers, law enforcement officers and municipal officials at the Academy of Medicine of Cincinnati. It was followed by discussion of the subject by a panel consisting of:

Dr. John A. Ordway, director of Cincinnati Municipal Court Psychiatric Clinic and director of the Alcoholism Clinic of Cincinnati General Hospital; Raymond E. Shannon, presiding judge, Cincinnati Traffic Court; Lt. Arthur Mehring, traffic analyst, Cincinnati Police Department; and Dr. Robert E. Howard, president of the Academy, who acted as chairman.

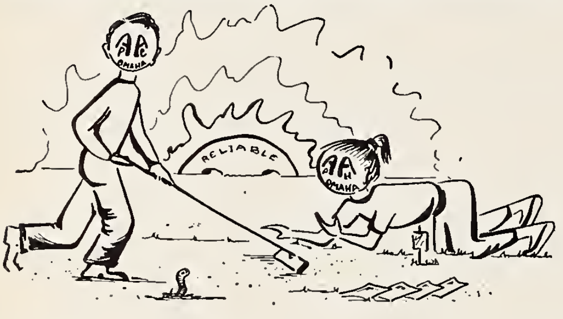
The "silent witness" in the 27-minute movie is one of several commercial devices which effectively measure the alcohol in the breath. While use of such devices is increasing, it was pointed out by Dr. Howard that they are not always available when and where needed.

From the viewpoint of the court, Judge Shannon said, "a chemical test is certainly welcome, but it is not the conclusive factor"—since the court is not concerned with amount of alcohol, but with the influence it had on the driving ability of the defendant.

Dr. Ordway estimated there are about 30,000 alcoholics in a city the size of Cincinnati—and most of them drive automobiles.

"The Silent Witness" brings questions and answers about alcoholism tests into the open through the story of a drinking driver who is arrested, tested by the police, and tried. It is described as "a motion picture of importance to those who drink, those who drive, and those who judge their fellow men."

Prints are available for showing before interested groups. Contact the American Medical Association's Film Library, Chicago, or The Wm. S. Merrell Company, Division of Richardson-Merrell Inc., Cincinnati 15, Ohio.



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Delinquents Often Object Of Parents' Conflicts

(Continued from Page 67)

regarding the son's behavior were often followed by conflicting comments from the mother.

For example, if the father said the boy could not drive the car, the mother would comment that of course there would be exceptions to this rule. Or if the father would tell the son to stay at home, the mother would ask him to run an errand for her.

The parents were not aware of the conflicting "orders" they were issuing which made it impossible for the son to obey. The parents described their mutual relationship as "perfect" except for the boy's problems. They said they never became angry with each other and never argued.

Obviously, Dr. Ferreira said, the boy "served as the vehicle for their disagreements."

When these conflicts were pointed out to the parents, the mother and father expressed anger openly at one another during an interview with the therapist. This eventually led to more expression of feelings, both positive and negative, between the parents in the home.

The father passed fewer and more reasonable "laws" and the mother gained new insights into her tendency to comment on and interfere with those "laws."

Dr. Ferreira said this pattern of family interaction, which he termed the "split double-bind," may play an important role in the development of delinquent behavior.

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Find Cause of California's '59 Virus Outbreak

Clinical evaluation of a strange and unusual illness, which affected children between 1 and 10 in many California areas between mid-June and early October, 1959, was described in the *Journal of the American Medical Association.*

The study was made by three Berkeley physicians, Drs. Robert L. Magoffin, Edwin W. Jackson, and Edwin H. Lennette of the California State Department of Public Health.

The disease, which in some areas reached epidemic proportions, was characterized by fever, and ulcerative sores in the mouth and on the hands and feet. In most cases the disease was minor, consisting of a few scattered mouth sores with mild irritation. The illness subsided within 7 to 10 days.

The doctors said as a result of their study they were able to pinpoint the trouble as due to a Coxsackie virus, named after the upper New York State town in which it was discovered in 1948 by Dr. Gilbert Dalldorf, then of the New York State Department of Health. The California physicians were able to identify this specific virus in 11 of 15 cases.

The Coxsackie virus has been known to be responsible for several ailments, such as non-bacterial meningitis, which can be mistaken for nonparalytic polio, inflammation of the throat, and a children's disease affecting the heart and brain. But the California outbreak, the doctors said, was believed to be the first of its kind in the United States. They said it closely paralleled a similar outbreak in Toronto during June and July, 1957.

The only difference was that the Toronto outbreak was confined to a single housing estate while in California the disease was known to have occurred in 14 different counties in all major geographic areas of the state.

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An automobile seat belt should be able to handle a 5,000-pound load although any seat belt is better than none. This is the opinion of Dr. Horace E. Campbell, Denver, expressed in the *Journal of the American Medical Association.*

The most realistic, current seat belt standard is the General Services Administration Standard which stipulates a minimal loop load of 5,000 pounds and webbing with a strength of not less than 4,000 pounds.

Belts used in military aircraft have a loop load of 8,000 pounds, he said, and the current standard of the Society of Automotive Engineers is 4,000 pounds, he said.

"Any belt is better than none at all, and the 3,000-pound belt can save many lives by holding the motorist in his seat in the relatively low-speed intersection crashes in town, prevent his ejection from the car, and prevent the many deaths that occur after ejection by lethal blows on curbs or trees or by being run over by his own car or other cars at the scene," he said.

In answer to a question submitted to the *Journal,* Dr. Campbell also explained that the speed of the car was not the relevant factor in determining the effectiveness of the seat belt.

"The important thing is the length of the stopping distance," he said.

As an example, he said, a car travelling at 60 miles an hour that is stopped in 15 feet by plunging into a thicket undergoes the same deceleration as a car going 15 miles an hour and stopped in 1 foot.

"The crying need, now that seat belts are becoming more widely accepted, is for a good energy-absorbing bumper," Dr. Campbell continued.

An effective stopping distance between the bumper and the engine block of two feet could be provided uniformly in automobiles, he said, and is "perfectly feasible." This would reduce the crash forces to less than half of what occurs in a car with a one-foot effective stopping distance, he said.

Dr. Campbell also recommended shoulder straps to "more than double the effectiveness of the belts."

With uniform deceleration over a stopping distance of two feet, the motorist with an adequate belt and shoulder strap can crash a bridge abutment at 40 miles an hour with little or no injury, he said, and at 60 miles an hour, the crash forces are still under the arbitrary survival level.

Two Groups Back A.M.A. Study On Medical Care Cost

Two prominent organizations in the health field have pledged their support and assistance to the studies being conducted by the American Medical Association's Commission on the Cost of Medical Care.

George Bugbee, president of the Health Information Foundation, and Ned F. Parish, assistant executive vice president of the National Association of Blue Shield Plans, offered their cooperation in determining the causative factors in health care costs at a recent meeting of the commission in Chicago.

The commission, established by the American Medical Association last June, is making a three-year study to gather and evaluate accurate statistics and authoritative information on health care costs. Its findings are expected to clarify the manner in which the public spends its medical care dollar for such items as physician services, hospitalization, drugs, dental care, and health insurance programs.

Bugbee volunteered to share with the commission studies made by the Health Information Foundation, including those on utilization of hospital facilities, trends in medical care expenditures, and health care of the aged.

Representing the National Association of Blue Shield Plans, Parish reported that his organization would provide information on the evolution and growth of surgical care prepayment plans as well as on the extent and scope of present coverage.

The commission is composed of 15 physicians, headed by Chairman Louis M. Orr, Orlando, Fla., and Vice Chairman David B. Allman, Atlantic City, N. J., both past presidents of the American Medical Association.

Dr. Orr stressed the need for an objective study of medical care costs. He said:

"Too many of the economic surveys and studies on medical care costs begin with a preconceived notion of what the situation is. The data gathered is then fitted to support this prejudice. We will be as objective and honest as possible in our study so that our findings will not be open to question or criticism."

The commission accepted a grant of $10,000 from the Charitable, Educational and Scientific Foundation of the Wisconsin State Medical Society. The funds will be used to conduct a field study within the state on medical care costs.

In addition to its physician members, the commission will be served by numerous experts from allied fields, industry, education, labor, and government. These consultants will advise the three committees of the commission investigating the areas of the economics of medical care, financing mechanisms, and the impact of the developments in diagnosis, therapy, and clinical management of disease on the cost of medical care.

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BOOKS RECEIVED

ATLAS OF OBSTETRIC TECHNIC—De Luxe Edition— J. Robert Willson, M.D., M.S., Professor of Obstetrics and Gynecology, Temple University School of Medicine, Philadelphia, Pa., Head of the Department of Obstetrics and Gynecology, Temple University Hospital, Philadelphia, Pa., 1961. 304 pages, $14.50. (Also available in a Regular Edition at $12.50.)

CARDIOVASCULAR DYNAMICS — Second Edition — Robert F. Rushmer, M.D., Professor of Physiology and Biophysics, University of Washington Medical School. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1961. 503 pages, $12.50.

CARDIO-VASCULAR SURGERY—A Manual for Nurses —by Members of the Surgical Staff and Members of the Nursing Service Staff, The Methodist Hospital, Texas Medical Center, Houston. George H. Peddie, M.D., Surgical Staff, and Frances E. Brush, R.N., Director of Nursing, both of The Methodist Hospital, Houston, Texas, editors. G. P. Putnam's Sons, 210 Madison Ave., New York 16, N. Y., 1961. 170 pages, $2.75.

CHILDBIRTH WITH HYPNOSIS—William S. Kroger, M.D. Edited by Jules Steinberg. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York, 1961. 216 pages, $3.95.

CURRENT THERAPY—1961—Latest Approved Methods of Treatment for the Practicing Physician. Howard F. Conn, M.D., editor. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1961. 806 pages, $12.50.

DUNHAM'S PREMATURE INFANTS—Third Edition— William A. Silverman, M.D., Associate Professor of Clinical Pediatrics, College of Physicians and Surgeons, Columbia University; Director of the Premature Nursery, Babies Hospital, New York, N. Y. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1961. 578 pages, $15.00.

FOR YOUNG ADULTS ONLY—The Doctor Discusses Your Personal Problems—Frank Howard Richardson, M.D., F.A.C.P., F.A.A.P., with a Foreword by L. Nelson Bell, M.D., F.A.C.S. Tupper & Love, Inc., 119 West 40th St., New York, 18, N. Y. 133 pages, $2.95.

HEALTH OF THE PRESIDENTS — Rudolph Marx, M.D. G. P. Putnam's Sons, 210 Madison Avenue, New York 16, N. Y., 1960. 376 pages, $5.95.

INFORMATION, PLEASE! FOR WOMEN ONLY (incorporating The Dunhill Chart)—Alfred Dreyfus II. Vantage Press, Inc., 120 W. 31st Street, New York 1, N. Y., 1961. 556 pages, $7.50.

Key and Conwell's MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS—Seventh Edition—H. Earle Conwell, M.D., F.A.C.S., Associate Professor of Orthopedic Surgery, University of Alabama School of Medicine, Birmingham, Ala.; and Fred C. Reynolds, M.D., Professor of Orthopedic Surgery, Washington University School of Medicine, St. Louis, Mo. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Missouri, 1961. 1153 pages, $27.00.

MANAGEMENT OF HYPERTENSIVE DISEASES—Joseph C. Edwards, A.B., M.D., F.A.C.P., F.A.C.C., Assistant Professor of Clinical Medicine, Cardiovascular Consultant to Division of Gerontology, and Consultant in the Hypertension and the Cardiac Clinics, Washington University School of Medicine and Barnes Hospital, St. Louis, Mo. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Missouri, 1960. 439 pages, $15.00.

NEUROMUSCULAR DISORDERS (The Motor Unit and Its Disorders). Proceedings of the Association for Research in Nervous and Mental Disease, Volume XXXVIII, December 12 and 13, 1958, New York, N. Y.—Raymond D. Adams, M.D., Lee M. Eaton, M.D., and G. Milton Shy, M.D., editors. The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 813 pages, $20.00.

SEX TECHNIQUE IN MARRIAGE, THE—Revised and Enlarged Edition—Isabel Emslie Hutton, M.D. Selections From the Original Introduction by Ira S. Wile, M.D., Former: Commissioner of Education of the City of New York, President of the American Orthopsychiatric Association. Emerson Books, Inc., 251 West 19th Street, New York, N. Y., 1961. 191 pages, $3.00.

SURGERY OF MITRAL STENOSIS—Modern Surgical Monographs 4—Robert P. Glover, M.D., M.S. (Surg.), F.A.C.S., F.A.C.C., Director of Surgery and Chief of the Thoracic and Cardiovascular Surgical Service, Presbyterian Hospital; and Julio C. Davila, M.D., F.A.C.S., F.A.C.C., Research Director, Cardiovascular Research Laboratory and Associate Thoracic Surgeon, Presbyterian. Grune & Stratton, Inc., 381 4th Ave., New York 16, N. Y., 1961. 219 pages, $9.50.

SURGICAL DISEASE OF THE LUNG—Buford H. Burch, M.A., M.D., Chief of Thoracic Surgery, Chest Center, Patton State Hospital, Patton, California; Instructor, Division of Surgery, College of Medical Evangelists, Loma Linda, California; and Arthur C. Miller, M.S., M.D., F.A.C.S., Assistant Professor, Division of Surgery, College of Medical Evangelists, Loma Linda, California; and Associate Thoracic Surgeon, Chest Center, Patton State Hospital, Patton, California. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1961. 128 pages, $8.50.

SURGICAL TREATMENT OF TRAUMA—edited by Preston A. Wade, M.D., with 35 Contributors. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 779 pages, $26.50.

SURVEY OF DENTISTRY—Final Report—Byron S. Hollinshead, Director, Commission on the Survey of Dentistry in the United States. American Council on Education, 1785 Massachusetts Avenue, Washington 6, D. C., 1961. 603 pages, $10.00.

A SYNOPSIS OF CONTEMPORARY PSYCHIATRY—Second Edition—George A. Ulett, B.A., M.S., Ph.D., M.D., Professor of Psychiatry, Department of Psychiatry and Neurology, Washington University School of Medicine, St. Louis, Mo.; and D. Wells Goodrich, M.D., Chief, Biosocial Growth Center, National Institute of Mental Health, National Institutes of Health, United States Public Health Service, Dept. of Health, Education and Welfare, Bethesda, Md. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Missouri, 1960. 309 pages, $6.50.

(Continued on Page 20)

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References: 1. Spielman, A. D.: Evaluation of a Combination Tablet of Theophylline, Ephedrine Sulphate, Phenobarbital, Thenyldiamine and Glyceryl Guaiacolate in the Treatment of Chronic Asthma, Ann. Allergy 18:281, 1960. 2. Waldbott, G.: Bronkotabs — a New Antiasthmatic Preparation (Preliminary Report), Int. Arch. Allergy 17:116, 1960.

For full information on Breon's five antiasthmatics, see pp. 538-539 of the 1961 PHYSICIANS' DESK REFERENCE plus the 2nd, 3rd, or 4th quarterly supplement.

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BOOKS RECEIVED

(Continued from Page 16)

BELOVED PROFESSOR—Life and Times of William Dodge Frost—Russell E. Frost. Vantage Press, Inc., 120 W. 31st Street, New York 1, N. Y., 1961. 350 pages, $3.75.

SYSTEM OF MEDICAL HYPNOSIS, A—Ainslie Meares, M.D., B.Agr.Sc., D.P.M., President, International Society for Clinical and Experimental Hypnosis. W. B. Saunders Company, Philadelphia, 1960. 484 pages, $10.00.

THING CALLED SPACE, THE—Jay E. Darlington, 5217 Hohman Avenue, Hammond, Indiana, 1961. Published by the author, from whom additional copies can be procured at the above address at $2.00 per copy, postpaid. 96 pages.

TREATMENT OF EMOTIONAL PROBLEMS IN OFFICE PRACTICE—Frank F. Tallman, M.D., Professor of Psychiatry, School of Medicine, University of California Medical Center, Los Angeles. The Blakiston Division, McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y., 1961. 426 pages, $11.00.

VALVULAR DISEASE OF THE HEART IN OLD AGE—P. D. Bedford, M.D., M.R.C.P., Consultant Physician to the Cowley Road Hospital, Oxford; and F. I. Caird, D.M., M.R.C.P., Medical Registrar; lately Senior House Physician, Cowley Road Hospital, Oxford. Little, Brown and Company, 34 Beacon Street, Boston 6, Mass., 1960. 194 pages, 38 illustrations, $7.50.

WHY CAN'T YOU HAVE A BABY?—Alan F. Guttmacher, M.D., Director of the Dept. of Obstetrics and Gynecology, Mount Sinai Hospital, New York City; Clinical Professor of Obstetrics and Gynecology, Columbia University, and Chairman of the Medical Committee of the Planned Parenthood Federation of America; and Joan Gould. Published by the Public Affairs Committee, 22 East 38th Street, New York 16, N. Y., a nonprofit educational organization, 1961. 20 pages, 25 cents per copy.

Dermatologists Report Improvement in Acne Patients with Topical Drying Preparation

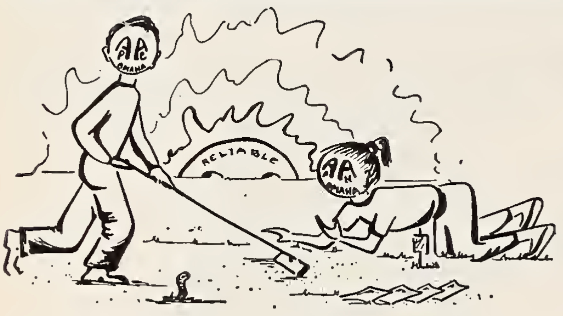
A new, topical drying preparation brought improvement in almost every one of 420 acne patients, according to Doctors Saul Blau and Norman B. Kanof. Reporting their findings in the August 1960 issue of the *A.M.A. Archives of Dermatology,* the New York doctors wrote that the new preparation contains an agent which exerts "surprising synergism" to produce rapid drying and peeling of the skin in acne.

The agent referred to (polyoxyethylene lauryl ether) is a new, drying surfactant never before used in acne preparations.

The doctors noted that the new agent acts best in combination with other ingredients. When used alone in concentrations up to 30%, polyoxyethylene lauryl ether produces "only a mild astringent sensation on the skin," they said. "However," they added, "with the addition of sulfur 2%, zinc oxide, talc and bentonite base, a surprising synergism is noted. Marked peeling and drying takes place, which is not duplicated by any of these ingredients alone."

The 420 patients with acne vulgaris were treated with a cream containing polyoxyethylene lauryl ether 6%, sulfur 2% and calamine powders (Fostril) for periods ranging from one to eight months. The cream was applied to acne areas on face, chest, and

(Continued on Page 26)



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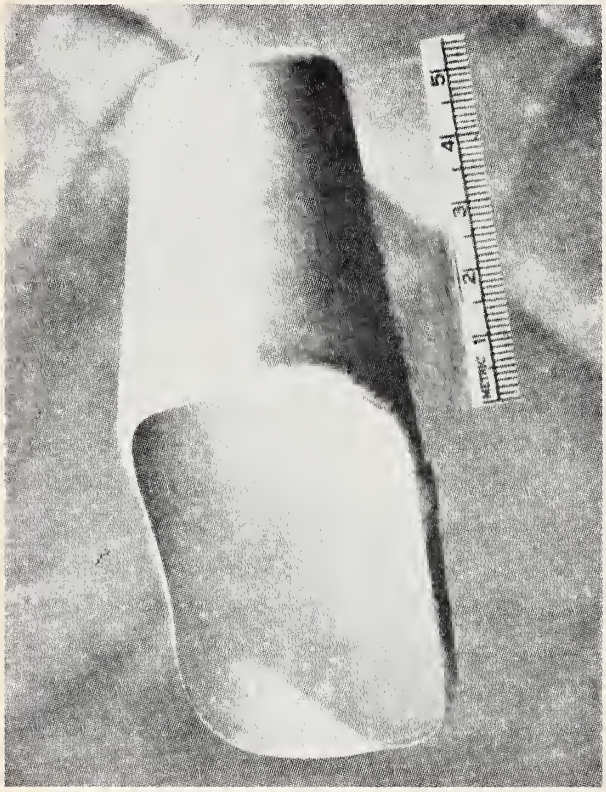

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*JAMA, January 2, 1960-Vol. 172, pg. 53

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Dermatologists Report Improvement in Acne Patients with Topical Drying Preparation

(Continued from Page 20)

back, once or twice a day. Apart from soap washings, no other medication was permitted. Minor acne-surgical procedures, such as incision, drainage and expression were done when necessary. With this regimen, 339 patients showed improvement—dryness and mild desquamation—within 4 to 7 days. The number of acne lesions was sharply reduced. Some patients complained of discomfort due to excess drying, but this effect was quickly and completely reversible with a more moderate schedule of application.

In 81 of the 420 patients the affected skin remained oily and active on only one or two treatments per day, but did dry and improve with three or four applications a day.

Doctors Blau and Kanof reported that the new preparation helped almost every case of acne. They summed up as follows: "Depending on the frequency of application of the medication, a satisfactory, rapid, controlled drying of the skin and hence improvement in the acne took place in almost every case. . . . There was no evidence of allergic sensitization to the medication in any patient in this series."

Heredity Reported as Factor In Spinal Ailment

Heredity has been reported for the first time as a definite factor in a relatively common type of spinal deformity.

A defect of closure in the spinal column (spinal bifida occulta) was found in two sons and a daughter of parents who both had the same ailment. The cases are described in the *Journal of the American Medical Association.*

In the children the bone defect was associated with a disorder of the nervous system. Stretching and deformity of the spinal cord had occurred as a result of a shortening of the threadlike connection (filum terminale) which anchors the spinal cord to the base of the spine.

Said Drs. J. Grafton Love, David D. Daly, and Lloyd E. Harris of the Mayo Clinic, Rochester, Minn.:

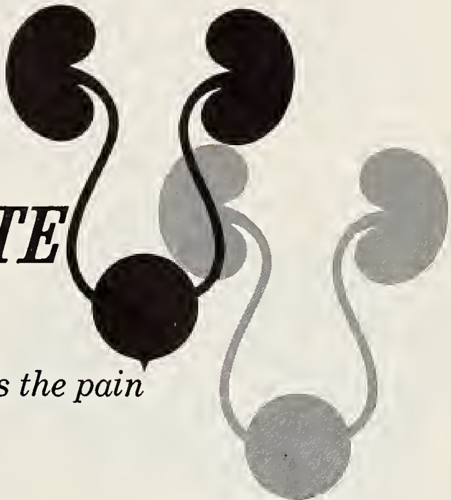
"It is our opinion that the occurrence of tight filum terminale in all three siblings of this family clearly indicates a gene-determined etiology and that this is the first reported instance of the syndrome as a hereditary disorder."

However, they added that "the precise mode of genetic transmission of this disorder is not clear."

The spinal column defect usually is not associated with neurological disorders, they said. However, when it is, symptoms include disturbances in gait, weakness and atrophy of the legs and deformities of the feet.

The spinal cord defect was successfully corrected in the three children by surgical procedures.

In urinary tract infection



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also available: "Thiosulfil"-A—No 784: Each tablet contains sulfamethizole 0.25 Gm., and phenylazo-diamino-pyridine HCl 50.0 mg., in bottles of 100 and 1,000.

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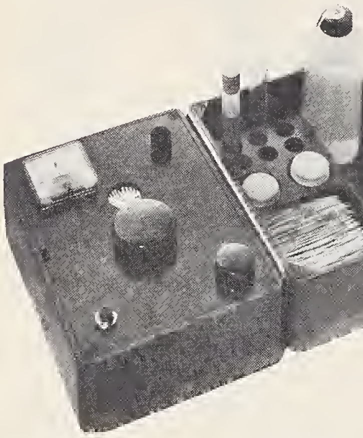

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Hospital's Trouble Shooting Clinic Aids 'Lonely Crowd'

A walk-in around-the-clock clinic for handling emotional problems has proved to be a popular service of the hospital where it was set up as the first of its kind.

The Trouble Shooting Clinic of the City Hospital at Elmhurst, New York City, created in October 1958, "has been successful in finding acceptance and in serving a useful community function," according to the *Journal of the American Medical Association.*

A total of 2,000 persons have been treated so far.

The clinic is part of the general hospital's comprehensive community psychiatric program for the prevention and cure of psychiatric and emotional problems.

The program includes separate psychiatric seminars for general practitioners, chaplains, guidance teachers, and lawyers. A school for parents and a program of annual psychiatric check-ups for children are planned in the future.

"It has been our aim . . . to reach key community figures . . . with the specific purpose of creating, in our community, an awareness of psychiatric problems and a sounder psychodynamic understanding," Dr. Leopold Bellak, Larchmont, N. Y., wrote in the *Journal.*

Dr. Bellak, chief instigator of the trouble shooting clinic, termed it a place where "anyone may walk in and simply talk things over."

"It is geared to offer on-the-spot treatment for troubled feelings and the vexing, ordinary problems of everyday life," he said. "We want to teach our population that to deal with more or less minor disturbances is often the soundest way to avert potentially serious difficulties."

Describing other aspects of the hospital's psychiatric program, Dr. Bellak said a one-year seminar program for the general practitioner was created because it is a well-established fact that he is consulted almost as frequently for latent emotional difficulties as for physical symptoms and is therefore often the first to have the opportunity of recognizing a psychiatric disturbance.

The course is designed to help the general practitioner function with a greater psychiatric understanding by acquainting him with basic psychiatric concepts and with methods of dealing with some of the psychiatric aspects of physical illness, he said.

The seminar for chaplains is designed to help ministers, priests, and rabbis with problems encountered with their parishioners, he said. It enables the chaplain "to fulfill his religious role more effectively by clearly delineating religious problems from other problems, and by being able to serve his parishioners to some extent in the nonreligious roles thrust upon him," he said.

(Continued on Page 39)

Hospital's Trouble Shooting Clinic Aids 'Lonely Crowd'

(Continued from Page 36)

The seminar for teachers was created in view of "an urgent community and school need" to have more extensive psychiatric services available for the problems of children, Dr. Bellak continued.

"Its aim is to make school personnel more perceptive in spotting early signs of trouble and more effective in utilizing the therapeutic resources of the community by imparting to them a broader understanding of pertinent psychiatric and psychodynamic concepts," he said.

As for the seminar for lawyers, he said, it "was originated because it is plainly apparent that many matters brought to an attorney's office have, at their roots, emotional or psychiatric undertones."

A program for a routine annual psychiatric examination of children currently is being worked out "in the belief that early recognition of emotional turmoil can most frequently arrest further serious development," he said.

"Our aim is to develop a technique that will not be too time-consuming, and can eventually be shortened sufficiently to be included in the regular annual pediatric check-up," he added.

Plans for the "school for parents" call for courses to convey basic information concerning the emotional development of children at different age levels and roundtable discussion, Dr. Bellak said. The programs will be so designed that groups of parents will meet with those whose children are in the same age groups, he said.

"There appears to be an ever-increasing interest on the part of parents to understand the problems of their offspring," he commented.

"In our society today, there is considerable pressure on parents to take the blame for many current juvenile difficulties, both social and intrafamily."

There also is a "growing group of more sophisticated, psychologically oriented parents who wish for something beyond what the local school, pastor, or educator can provide."

"Aware as we are of the vital interest and need of these mothers and fathers, we are convinced that a project such as our 'School for Parents' will serve the community well," he said.

Dr. Bellak said: "If general hospitals across the nation were to incorporate at least the idea of a trouble shooting clinic into their program, a major step might be made in preventive psychiatry.

"In this sense the psychiatric arm of any hospital assumes a sociological function in our world of 'lonely crowds' . . .

"The Trouble Shooting Clinic and the key figures of the community who have acquired some psychodynamic understanding may serve some of the functions of friend, neighbor, family doctor, or even of the closely knit family that has disappeared in the swift changes of our technological society."

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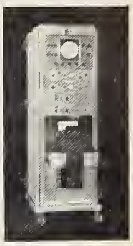

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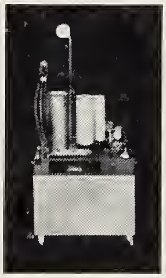

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Trampoline Acrobatics Can Cripple or Kill

Trampoline acrobatics performed by untrained amateurs can cause crippling and even fatal injuries, the *Journal of the American Medical Association* said recently.

In a strong warning against the dangers of increased popularity of trampoline tumbling among novices in the absence of proper supervision or competent instruction, the Nov. 26 *Journal* said physicians and health agencies throughout the nation should be alerted to the problem.

"Recent improvements in equipment design have reduced the number of minor injuries which result from striking the solid supporting structures, though these continue to occur," the *Journal* said in an editorial.

"But the most dangerous place on the trampoline is still the center of the mat. Here may occur the serious, permanently crippling, or even fatal injuries, those from acute flexion [bending] of the cervical spine."

In an accompanying article, William G. Ellis, M.D.; David Green, B.S.; Norman R. Holzaepfel, M.A., and A. L. Sahs, M.D, Iowa City, Iowa, said the rise in the number of inexperienced performers on the trampoline has been paralleled by a rise in the number of injuries sustained during its use.

"When the maneuvers are performed imperfectly or incompletely, they lead only to disaster," they said.

Five cases of severe injuries to the nervous system resulting from trampoline accidents were reported. All were men, ranging in age from 17 to 38. Three developed paralysis of both arms and both legs. The maneuver that led to the accident in four instances was the backward somersault. Two accidents occurred in a well-equipped university gymnasium under direct supervision of trained personnel.

The fatality involved a 19-year-old member of a university gymnastics team. While practicing on the trampoline he performed an elementary back drop, landing on his shoulders and back. He immediately became numb and paralyzed in his arms and legs. Examination revealed dislocation of a bone of the spinal column. He died 14 days later.

In another case, a 38-year-old railroad brakeman who had not exercised on a trampoline for 20 years attempted a backward somersault, landed on his head and shoulders and became paralyzed in his arms and legs.

A similar paralyzing effect occurred in a 17-year-old high school senior who failed to complete a backward somersault and landed on the back of his neck. The accident happened after he had been working out on the trampoline for eight hours.

"Any unsupervised sport carries with it certain dangers," the authors concluded.

"Gymnastics is no exception. The chief hazard lies in attempting difficult gymnastics feats before mastering the fundamentals.

"Attempts at somersaulting, both backward and forward, are the most dangerous maneuvers on the trampoline. Ten hours . . . is a minimum training period before somersaulting should be attempted."

The authors urged local departments of health to establish minimum regulations concerning trampoline amusement centers. These regulations should cover the following points:

—The presence of qualified instructors at all times.

—Type of equipment and their continued repair.

—Minimum number of persons on trampoline at the same time.

—Minimum distances between trampolines and between trampolines and other obstructions.

—Prohibition of eating on trampolines.

—Proper lighting.

—Enforced rest periods.

—Compulsory wearing of shirts and socks while jumping.

—Registration of patrons, including whom to contact in case of accident and previous gymnastic experience.

—A training program for the patrons before they attempt such maneuvers as somersaults, particularly

(Continued on Page 62)

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Aid Replaces Ax for Drinking Employe

American industry is giving aid instead of the ax to its alcoholic employes.

An article in the December *Today's Health*, published by the American Medical Association, said business firms have awakened to the staggering cost and innumerable problems related to the harboring of "hidden" alcoholics, or firing them without attempting rehabilitation.

Many companies have established alcoholism programs to seek out the problem drinkers in their ranks and offer them treatment.

"Not too many years ago all companies treated the excessive drinker as a moral problem and thought it better left alone," the article said.

"Industry's new 'soft' approach to the alcoholic promises more than just a break for the man unable to control his taste for alcohol. It means the alarming growth of alcoholism in industry is coming under direct attack in the office and in the factory where the early stages of the problem drinker may be detected through close observation of his behavior pattern."

There are various estimates of the number of alcoholics in industry, the article said. It is commonly accepted that there are more than three million with one estimate as high as five million.

Alcoholism costs industry more than 500 million dollars annually in hospitalization and known expenses and an estimated 10 billion dollars more each year in indirect costs resulting from absenteeism, inefficiency, and accidents.

It is not easy to detect an alcoholic in industry, the article pointed out. Research indicates that it takes 10 to 15 years of increasingly steady drinking for a person to become completely addicted to alcohol and many efficient workers do not exhibit signs of deterioration for a long time. In addition, fellow workers usually cover up for the drinker and rarely tip off supervisors about the problem.

The company programs emphasize that alcoholism is a treatable disease, recovery is possible for all alcoholics, and the complete cooperation of the patient, his family, employer, and fellow worker is necessary.

"Various methods are used by industry's alcoholism programs to treat alcoholics," the article said. "Some use counselling by specially trained counsellors. Some rely upon their medical departments. Others maintain separate clinics like Chicago's Portal House where medical specialists, psychiatrists, and psychologists are available.

"Some have found success with groups of Alcoholics Anonymous. . . .

"Excellent results have been achieved, also, in merely interviewing the involved individuals and referring them to proper community resources such

(Continued on Page 50)

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In order to use MEDIKIT you'll take a fresh specimen from an abscess, boil, carbuncle, infected wound, sinus drainage, urine, draining ear or inflamed throat. Then you streak the whole surface of the specially developed Mueller-Hinton Blood Agar plate with the cotton-tipped applicator, apply the patented antibacterial ring to the streaked surface (see picture) cover it and leave at room temperature. No special equipment is necessary.

Twelve to twenty-four hours later, the predominant bacteria of the specimen will have grown out in every portion of the plate, except that area protected by the antibiotic. When the bacteria is sensitive to one or more antibiotics on the ring, those areas will be indicated by clear "halos" on the plate. Simple observation, in normal light, will show you clearly which antibiotic is most effective against the infection and you may prescribe accordingly (see picture)

Since MEDIKIT is based on the principle that patient's infected discharges contain infectious bacteria in almost pure strains, your MEDIKIT readings will be far more accurate and scientific than simple empirical diagnosis.

The specially developed Mueller-Hinton Blood Agar plate will maintain its stability and its effectiveness when properly refrigerated, for at least two months from the time you receive it. The patented test ring contains the most commonly used, effective and standardized* antibiotics: Penicillin, Erythromycin, Terramycin®, Tetracycline, Aureomycin®, Chloromycetin®, Dihydrostreptomycin, Triple Sulfa. Once you have the information you need, throw away the entire plate and ring—just as you would any infected dressing. MEDIKIT is designed to be completely disposable and is so easy to handle!

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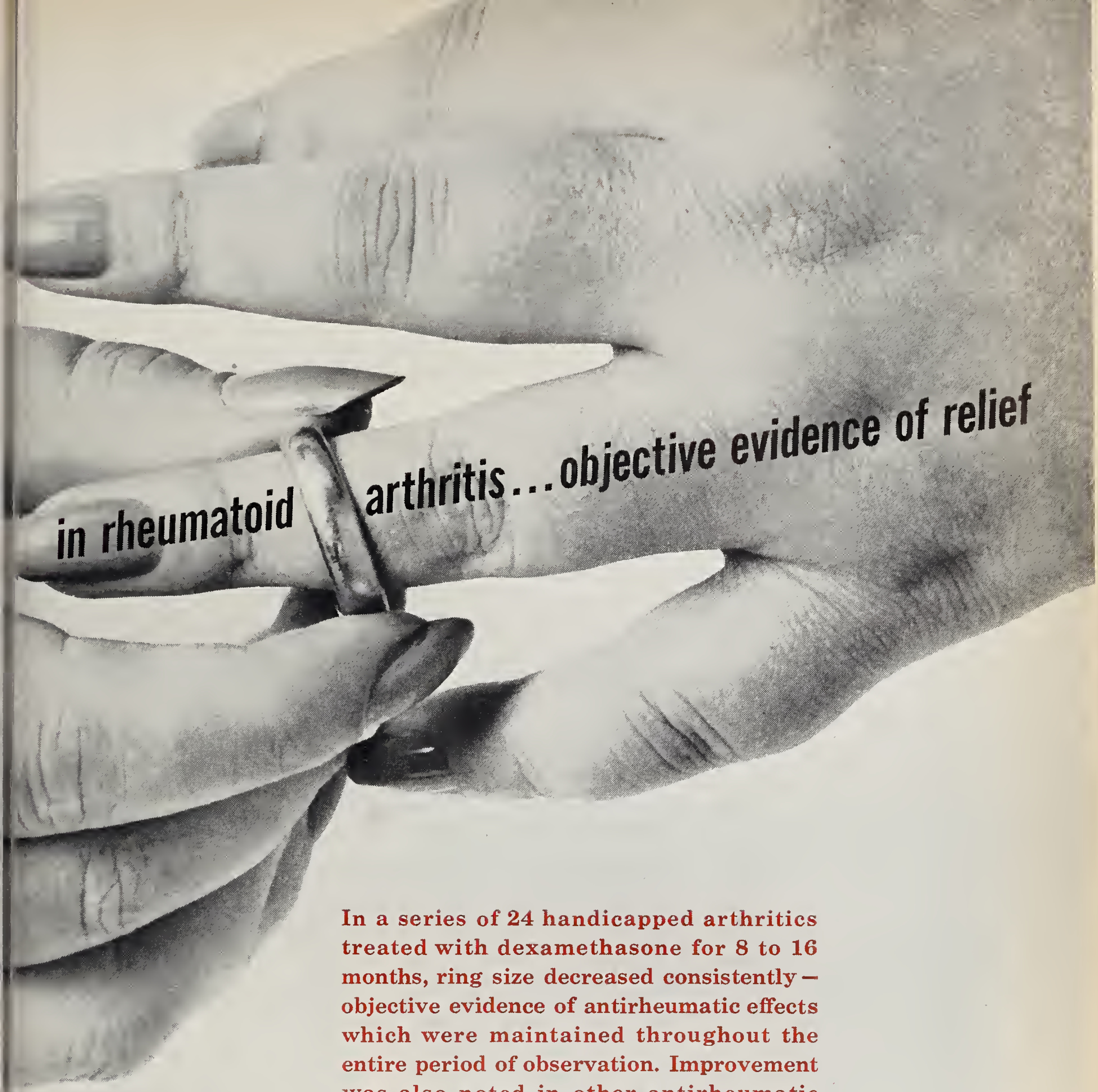
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Supplied: as 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

Reference: 1. Bunim, J. J., in Hollander, J. L.: Arthritis and Allied Conditions, ed. 6, Philadelphia, Lea & Febiger, 1960, p. 364.

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New Compound Rated Tops For Skin Infection

A new compound has produced excellent results in the treatment of a fungus skin infection known as tinea versicolor.

The infection causes fawn-colored scaly spots over the upper part of the body.

Writing in the *Journal of the American Medical Association,* Dr. Erwin H. Zimmerman, Huntington, N. Y., said the new agent, 9-aminocridinium 4-hexylresorcinolate (Akrinol), "far surpasses any medication" he has previously used.

Dr. Zimmerman said a preliminary study produced "excellent results" as reflected by a relatively short period of therapy required for clearing of the infection, a complete lack of side effects, ease of application and cosmetic acceptability of the preparation, and an exceptionally low incidence of recurrences.

The new compound was used to treat 40 patients, the majority of whom had had the disease for two to three years. Treatment was continued for four to eight weeks.

Of the 40 patients, 34 or 85 per cent showed excellent results with complete clearing of the infection after the first course of treatment. Five showed a good response with complete clearing after two courses of treatment. Only one had a consistently poor response.

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Aid Replaces Ax for Drinking Employe

(Continued from Page 47)

as family relations agencies, welfare and health departments, and medical societies."

The program at Consolidated Edison shows about 85 per cent of the problem drinkers discovered are willing to go to a consultation clinic set up by the company. Allis-Chalmers reduced its discharges of alcoholics from 95 to 8 per cent through its program for alcoholics at a savings of $80,000 a year.

The article was written by Howard Earle.

Located in the heart of the beautiful Phoenix citrus area near picturesque Camelback Mountain, the hospital is dedicated exclusively to the treatment of psychiatric and psychosomatic disorders, including alcoholism.

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MEDICINE
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Almost Within Our Grasp

WARREN L. BOSTICK, *M.D.*, San Francisco

WE, AT THIS MOMENT, pause to welcome a new opportunity for California doctors to serve their state—a renewed occasion to translate into action the deliberations of this House, dedicated to assuring excellent health for a dynamic America.

Change is upon us, and with ever increasing acceleration. Time was, when physicians were traditionally stabilized in society. In those halcyon years medicine bore many fruits for her patients. Antiseptics, anesthetics and antibiotics were developed. With its scientific allies, medicine warred on other plagues of mankind until they faltered and fell: diabetes, glaucoma, pernicious anemia.

Let us acknowledge the driving essence of these victories over disease. Ambition was not enough—it required dedication to patients. Intelligence did not suffice—it needed moral fiber. Material reward was hollow—it required thankful human beings. As we step forward to serve America in the coming year, let us preserve those basic ingredients that made our efforts successful.

Saving the best of the past, however, must never impede the acceptance of the new. Fresh and profound social changes are upon us. People have tasted the delights of good health and rightly demand it. With magnificent broad education, Americans are recognizing excellence of quality in medicine and will have nothing less. Having changed from a pattern of a savings account economy to one of pay-as-you-go acceleration, they insist upon avoiding most unexpected expenses by insurance. Americans demand prepayment for their health needs. The more complete the coverage, the more pleased the citizen-voter.

And all of this is occurring in the new framework of increasing group action and enlarging government. Medicine has too often failed to recognize a potential basis for common agreement with new social forces. Labor has long ago joined business as a mature member of the economic family. When problems arise which tend to separate us from a major group in society, let us first agree on the areas that unite us instead of belaboring the problems that divide us. Let us see in responsible labor and responsible business many forces emphasizing the dignity of individualism and major bulwarks against massive paternalistic government.

As for the role of government, if it would be constructive and helpful in problems of health it should do no more than assure fair play and indicate broad lines of principles to aid great industries and professions in serving the people. Government can be the umpire. Thus it must stay out of the game. When the government seeks health services for its employees or its charges, it must, if America is to be well served, obtain them in the open market in cooperation with medicine which has evolved delicate and proven methods for assuring quality, personal service and reliability.

What is the priceless health care ingredient that doctors know the people will lose if government destroys the present form of medical practice? They will lose quality medical care administered by a personal physician performing at his maximal capa-

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Presidential Address before the House of Delegates of the California Medical Association, May 3, 1961.

city. What factors are essential to inspire such effort under all circumstances? They are not many: First, the privilege of a patient to consciously employ and/or dismiss his doctor with full freedom; second, the necessity of the doctor's carrying the continuing full responsibility for the consequences of his decisions; and finally, the inspiration of maximal personal concern and mutual understanding between a doctor and his patient. To the degree that personal selection is impaired, mediocrity is invited. To the extent that responsibility and continuity is diluted, maximal effort is sapped; to the point that empathy and mutual respect are compromised, catastrophe is tempted. These are basic truths that will be acknowledged by all wishing to obtain the best medical care.

We do not ask what rights can we demand to protect our practice, but rather, what safeguards are needed to assure the best medical care for all people.

And if the medical profession is itself to be worthy of its obligation, it has many clear responsibilities. Some are well recognized and well implemented. Its scientific excellence is outstanding. The quality of medical education stands as a beacon of academic and professional self-discipline outside of government. Other responsibilities are more recently assumed. I refer to making health facilities available to all people. Medicine recognizes this as a legitimate demand of our citizens. In cooperation with the responsible, distinguished, and socially sensitive California Hospital Association, this medical team is intent upon meeting this demand.

Still another challenge is being met with full energy and dedication. This is the assurance of quality in medical services—in the office, in groups, and in the hospital. It must be flawless at all levels. The people will accept nothing less; our profession must demand of itself even more. Our insistence on quality is underscored by action: Legislation in cooperation with the legal profession, active support of quality recommendations of the Governor's Committee on the Study of Medical Aid and Health, and close cooperation with the Hospital Association. These represent effective acceleration along the path of quality assurance. More lies in the future. We cannot falter until we and all patients know in our hearts that each doctor is acting in his field of competence and at full quality. Some of medicine's finest opportunities for self-determination lie in this area.

And can we let this year, that portion of the future which is almost within our grasp, pass without soul-searching decisions and vigorous action in modernizing our methods by which our patients can purchase our services?

Experimentation is not only for the natural sciences. It must apply to developing new and variable methods for providing health services. A method which flourishes in one area is restrictive in another; one that unites a small group disrupts a large one. There is no universal single method, there are only common principles. The best medicine and health care is dynamic, personal, local, responsive. To propose the centralization of a massive single health directive for a whole state or, worse yet, a whole nation, would be to choke off the unfolding promise of one of the finest flowers of our American culture—its health.

Economic habits have changed. Installment payments have replaced cash and carry; insurance has supplanted bank reserves. As with their homes, their life insurance, their property liability, Americans demand that health liability be prepayable. Doctors must make their service fit in the new pattern. This means quality assurance, abuse control and predictable charges. In the past decade great progress has been made in all three. It is not enough for a doctor to say he serves; he must ask, "Is it my best?" It is insufficient for a doctor to know he heals; he must ask, "Have I done it efficiently?" It is inadequate for a doctor to know that his charge was for saving life; he must ask, "Would my charges be considered fair by my professional peers?"

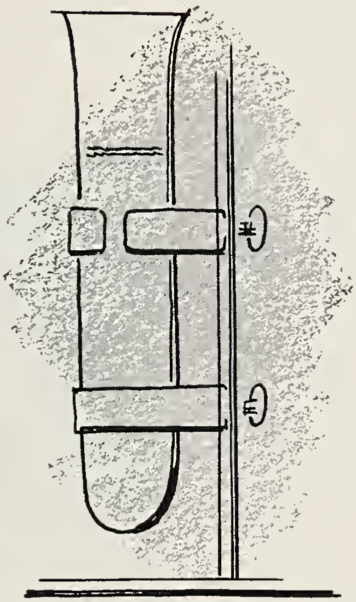
It is in the charges for professional service that emotions run highest and understanding lowest—emotions of physicians and of patients alike. Herein lies the last major area of insufficient unity. We have made major progress, however. Our C.P.S. has been a pattern for all the nation. Our Relative Value Study has received the sincerest form of flattery—imitation. Local and regional plans of various medical foundation concepts have met a need and inspired local physicians to see, to understand and to guide the processes that make medicine's services marketable at maximal coverage.

Here is our single major and most urgent action if medicine is to survive in a form to produce its greatest good: Either all doctors unite to establish their own disciplined program of reasonable prices for their services in a prepayment system available to all, or the government will do it for them. It will do so destroying many essential aspects of the health care of the people, and at exorbitant cost. We have little time left. It may already be too late. This is a trying lesson in democracy for our profession. Excellent methods have been devised by partners, fine procedures are in use by county societies, exciting principles have been approved by this House of Delegates. However, major decisions often echo with reservations, hesitancy, doubt. Of course in a republic there is always a minority opinion. Let there always be a minority, for therein lies the essence and flexibility of a democracy. Let there, however, always be an inspired majority, assuming its responsibility with vigor and vision and resting secure in the knowledge that it has united behind it the entire profession, and that its cause is right.

And so, my fellow physicians, as we move together into a new year with your newly selected leaders, what do we offer America for her confidence in us? A responsible profession, concerned with the cost of health and doing something about it; a humble profession, aware of its limitations but determined to care for our patients with ability and dedication; a proud profession, sharing with citizens the knowledge that with our system, America enjoys the finest fruits of excellent health ever known to man.

And finally, at this moment of rededication, what do we ask in return? Only the privilege of remaining the personal servants of the people of California and America, so that when history looks back upon our efforts and the confidence placed in us, it can truly say we recognized the privilege, we gave our best, and, with the help of God, we did not fail.

40 Twain Harte Lane, San Rafael.



Electrocardiograms by Telemetry

TRAVIS WINSOR, *M.D.*, E. A. SIBLEY
and E. K. FISHER, Los Angeles

• Radiocardiography makes it possible to transmit an electrocardiogram by air from patient to recording device. The distance of transmission may be a few feet, as in a physician's office; or it may be many miles, as when transmitting electrocardiograms from aircraft, rockets or satellites to the earth. The radiocardiographic method has the advantage of versatility, simplicity, freedom of movement for the patient and high amplitude, and is especially suited for recording electrocardiograms during exercise.

MODERN ELECTRONIC telemetering equipment has made it possible to transmit electrocardiographic and other physiologic data from animals and man through air to appropriate recording equipment many miles away.[2,4]

The telemetering of the electrocardiograms from the monkeys Able, Baker and Old Reliable during rocket flight demonstrates the importance of the method in the study of the heart during flight. Here, the method of telemetry has given results which suggest that rocket travel would not evoke excessive cardiac responses in man. Barr and Voas[1] described in detail a telemetering system which has been employed for the recording of electrocardiograms and other physiologic measurements in test pilots flying aircraft of experimental design. Here, the method makes it possible to observe from the ground abnormal cardiovascular phenomena in the pilot, and hence to send to the pilot by radio the necessary warnings to prevent accidents.

The purpose of the present report is to point out the application of the radiocardiogram in the practice of cardiology and to describe its advantages and disadvantages as compared with the electrocardiographic system which is employed conventionally.

METHODS AND MATERIALS

The equipment used in these studies—a transmitter and a receiver—was developed especially for use in physicians' offices. The transmitter, which weighs 3 ounces, is housed in a plastic box 1x2x3 inches (Figure 1). Usually this unit is worn like a necklace around the neck, or it may be placed in a pocket. The receiver consists of an FM tuner and conventional electrocardiographic machine and/or cathode ray oscilloscope. The method involves the detection of voltage variations from the surface of the body which are picked up by appropriate electrodes. The voltages are amplified and are broadcast as a frequency modulated signal to the FM tuner, which detects and converts frequency variations into voltage changes that activate the stylus of the electro-

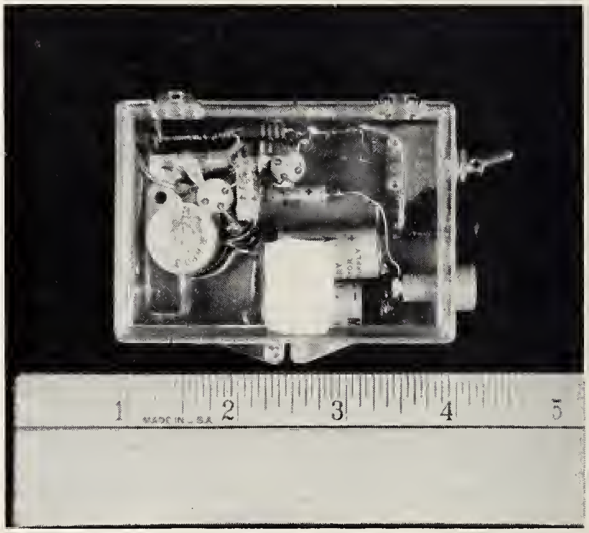


Figure 1.—Photograph of amplifier and transmitter of the radiocardiographic unit.

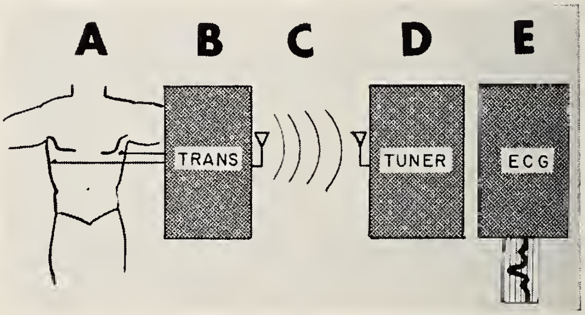


Figure 2.—Radiocardiographic system employed in these studies. (A) Patient; (B) amplifier and transmitter; (C) radiowaves; (D) frequency modulated tuner; (E) ECG machine.

From the Heart Research Foundation, Inc., 4041 Wilshire Boulevard, Los Angeles. Aided by a grant from Lockheed Aircraft Corporation, Missiles and Space Division. The technical assistance of Sally Cody is gratefully acknowledged.

From the Department of Medicine, University of Southern California School of Medicine, Los Angeles 33.

Submitted September 26, 1960.

cardiogram or beam of the cathode ray oscilloscope (Figure 2).

To demonstrate the similarity of the electrocardiogram and the radiocardiogram a test was made as shown in Figure 3. Two tracings were made simultaneously on a multichannel Sanborn recorder. In one the electrocardiogram was recorded by the conventional technique of connecting the patient directly to the recorder with wires, and in the other the electrocardiogram was transmitted to the recorder by air. Flat German silver electrodes, 2x3 cm., were applied with a good quality electrode jelly and were held in place by a chest strap. The electrocardiogram and radiocardiogram appear identical in the record.

The electrode positions employed in this study were at the right and left sixth intercostal spaces in the midaxillary lines, the polarity being adjusted so that a positive potential at the left chest with respect to the right chest would result in an upright deflection in the trace. The resulting trace resembled lead I in most cases. Good electrocardiograms were obtained without distortion with the patient supine, sitting, standing, walking on the floor or on a treadmill.

Carbery and Freiman pointed out that the use of stainless steel mesh wire electrodes with bentonite paste, applied to the manubrium of the sternum and sacrum with adhesive tape, decreases movement of the electrode on the skin and diminishes wandering of the baseline. Also, filtering of the electrocardiogram to permit only the passage of waves from 0.1 to 20 cycles per second helps to decrease the distortion caused by muscle tremor that may be present, especially if the patient is exercising.

RESULTS

The exercise tolerance test was carried out by having the patient walk on a treadmill at 2 miles an hour up a ten-degree incline while recordings were being made from the midaxillary transthoracic lead described above. The electrocardiogram was observed continuously on a cathode ray oscilloscope and was recorded intermittently on a Poly-Viso recorder at paper speeds of 25 or 50 mm. per second. The duration of exercise was recorded with a stop watch. The patient was observed carefully during exercise for shortness of breath or the development of an ashen-gray color. If S-T segment shifts or cardiac irregularities appeared, the treadmill was stopped and the patient stood, sat or reclined for subsequent recordings to observe the electrocardiographic changes during recovery. Usually abnormal S-T segment shifts developed before precordial pain was detected by the patient. Occasionally the pain did not develop until the patient was supine or resting.

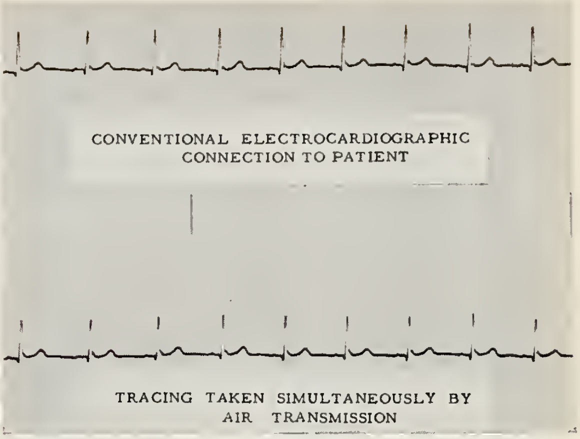


Figure 3.—Similarity between electrocardiogram recorded by direct wire connection and radiocardiogram recorded by air transmission.

Some important differences between the exercise radiocardiogram and the exercise electrocardiogram by direct wire connection are apparent. First, with the radiocardiogram the patient is free to move throughout the test, which makes walking easy and also makes possible other maneuvers such as squatting. Second, the high output of the radiocardiographic transmitter makes it possible to obtain tracings of high amplitude when desired and thus unmask small S-T segment shifts. Although the high amplitude causes the QRS complexes to sweep out of the oscilloscopic field or the recorder stylus to hit the top of the paper, the S-T segments and other waves of relatively low amplitude are clearly portrayed. In this way, abnormal S-T segment shifts due to cardiac disease can be detected early and are easily read from the radiocardiogram. Third, the radiocardiographic technique makes it possible to record the electrocardiogram *during* exercise without distortion from muscle tremor, thereby making it possible to stop the test at any point before an excessive amount of exercise has been given. With the conventional two-step test a prescribed amount of exercise is given, based on age and weight of the patient, and the electrocardiogram is recorded before and after, but not during, the exercise. By continuously recording the radiocardiogram it is possible to stop the exercise at an arbitrarily selected level, for example when the S-T segment shifts show deviations of 1 mm., and have the patient recline. Recovery changes can be observed by making records at one-minute intervals for five minutes (Figure 4).

The freedom with which the patient can move around and the versatility of the instrument are distinct advantages. The instrument can be worn under the clothes and the patient can walk a few hundred feet from the receiver into another room,

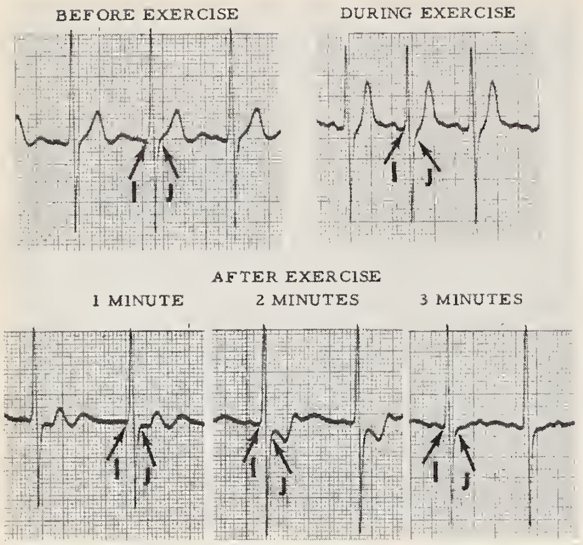


Figure 4.—Typical J and S-T segment shifts associated with positive exercise test. The relationship between I, J and S-T segments is shown at different periods during and after the test.

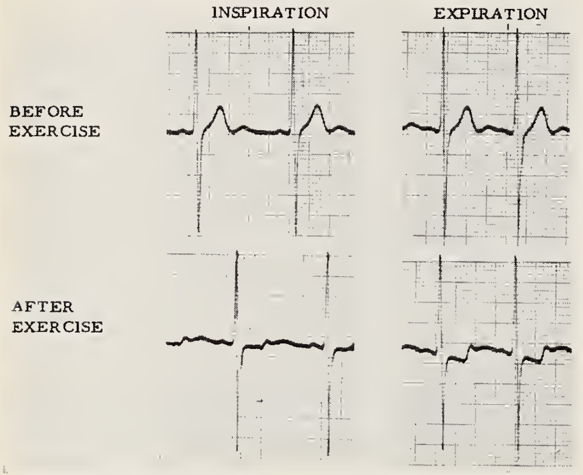


Figure 5.—Tracings during inspiration or expiration may assist in revealing the presence of cardiac disease.

ascend stairs or eat and during this time have his electrocardiogram recorded continuously. It is probable that the radiocardiogram would be suitable for recording tracings during surgical operation, for only two needle electrodes need be applied to the patient and the small transmitter can be connected to the electrodes by fine wires. Owing to the low voltage of the power supply, the transmitter can be used with many anesthetic gases without danger of igniting them. The trace could be transmitted to an appropriate recording system at any convenient place outside the surgery. Also, the radiocardiogram may be transmitted with other physiologic data such as pulse, temperature, electroencephalogram, arterial or venous blood pressure, respiration rate, each recording being transmitted on a different frequency. Appropriate receivers tuned to the proper frequency could receive the information. In this way a large mass of data can be recorded on tape and stored for later analysis.

The interpretation of the significance of the S-T segment shifts of the electrocardiogram sometimes is difficult. However, there are certain helpful features in the abnormal tracing which may be recognized. There are two points on the tracing which are of significance, the I and J points. The I point is formed by the junction of the auricular T wave with the beginning of the QRS complex, and the J point is formed by the junction of the QRS complex with the beginning of the S-T segment. In ordinary circumstances the I and J points are on the same horizontal level. A positive exercise tolerance test is characterized by deviations (usually descent) of the J point with respect to the I point as seen in the midaxillary transthoracic lead. In a positive test, after exercise, characteristically that portion of the S-T segment which is between the J point and the peak of the T wave falls at or below the J point. After 3 or 4 minutes the S-T segment and J point return to the control condition. Tracings during inspiration and expiration are of diagnostic value (Figure 5).

It is entirely probable that the advent of the radiocardiogram represents an important step in the rapid transmission of physiologic data from patient to a medical reduction center and that in the near future medical data reduction centers handling technical medical information will provide many services to assist physicians with many technical procedures.

4041 Wilshire Boulevard, Los Angeles (Winsor).

REFERENCES

1. Barr, N. L., and Voas, R. B.: Telemetering physiologic responses during experimental flights, Am. J. Cardiology, 6:54-61, July 1960.

2. Burch, G. E., and Gerathewohl, S. J.: Observations on heart rate and cardiodynamics during weightlessness, Aerospace Med., 31:661-669, Aug. 1960.

3. Carbery, W. J., Tolles, M. S., and Freiman, A. H.: A system for monitoring the ECG under dynamic conditions, Aerospace Med., 31:131-137, Feb. 1960.

4. Henry, J. P.: Physiological laboratories in rockets, Astronautics, 2:22-26, 1955.

Drugs in Pregnancy

Their Effects on the Fetus and Newborn

DOUGLAS H. SANDBERG, *M.D.*, Los Angeles

• In considering drug therapy for pregnant women, it must be borne in mind that almost all chemical compounds in use as therapeutic agents pass from the maternal to the fetal circulation through the placenta. These drugs can produce a wide range of harmful effects on the fetus and neonatal infant. The effects of some substances for which we have data reflecting a deleterious effect are listed.

It is suggested that in the future more caution be exercised in using drugs during pregnancy and that in histories, both obstetrical and pediatric, any therapy given to the mother during gestation be recorded in detail.

It has been recognized for a long time that drugs given to a pregnant woman may pass through the placenta into the fetal circulation. It is only comparatively recently that the significance of this phenomenon has been recognized, the stimulus to studies of the question having come from the increasing evidence of fetal problems traced to the use of drugs during pregnancy. Although information on this subject is meager, studies are now rapidly appearing. The present communication is a brief summary of some of the practically useful data on the placental transfer of drugs.

The old concept of the placenta as a "barrier" is misleading. It is better characterized as a filter. At any rate, we now know that almost all drugs pass the placenta and appear in the fetal circulation, although often the concentration of the drug is a great deal higher on one side of the placenta than on the other. The placenta is actively involved in the transport of certain substances—sodium, for example—which may explain the gradient of concentration found. Substances of high molecular weight, like proteins, pass only slowly and in small amounts through the placenta. There is some question as to whether thyrotropic hormone and parahormone pass at all, and curare given to the mother does not appear in the fetal circulation.

Differences in placental passage of drugs during normal as compared with complicated pregnancy must be defined before drugs can be safely used during gestation.

Page[31] defined the placental membrane as "those tissues of a developing ovum or embryo which are in contact with maternal tissues or fluids at any stage of gestation and which mediate the transfer of substances from the mother to the fetus or in the reverse direction." As we learn more about this problem, his classification of placental transport mechanisms may be useful in ordering our thinking about this subject. He used four characteristics as a basis of classification: (1) The primary physiological significance of substances being transferred, (2) the relative rates of transfer, (3) the actual or predominant mechanisms of transport, and (4) the equality or inequality of distribution of the substance.

Foulger,[12] in discussing the ability of chemicals to pass natural membranes, grouped chemical compounds into two classes:

1. Those having fairly easy access to the cell interior, such as gases; those compounds more fat-soluble than water-soluble, organic bases and unionized combinations of weak acids with weak bases; and

2. Those not able to penetrate membranes easily, such as compounds with low fat solubility, salts of organic bases and highly ionized compounds.

These two classifications are more likely to be useful in thinking about relatively short periods of exposure of the fetus to the substances, and less so when a drug is given over longer periods.

After accepting the fact that most compounds can pass rather easily from the maternal to the fetal circulation, we must then consider what happens to them once they arrive. It is a rather general opinion that the body probably does not have a specific mechanism for dealing with each new foreign compound to which it is exposed and must adapt existing mechanisms to do the job.[48] This concept of relative lack of specificity of detoxication mechanisms is not in accord with some studies of micro-organisms showing that certain bacteria can synthesize specific proteins that deal with new foreign substances. At least in humans these mechanisms are often not efficient enough to eliminate a drug with a minimum of harmful effects. The resulting chemical alteration may at times produce a

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From the University of California at Los Angeles Medical Center, Los Angeles 24.

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substance more toxic than the original compound, as is the case, for example, with the detoxication of fluoroacetate.

The mechanism for eliminating undesirable substances from the body is called detoxication, the processes of which can be divided into two main phases.[48] The first is the oxidation, reduction or hydrolysis of the material, which may result in the activation of a biologically inactive compound, alteration of the substance's activity or the inactivation of active compounds. We still have very little information as to the clinical significance of this phase. The second phase is ordinarily an inactivation process with the occasional exception of what has been called "lethal synthesis." This phase consists of one of various methods of converting the compound into a product which the kidneys, or perhaps the liver, can excrete. Understanding this latter phase has become of great clinical importance to pediatricians. This phase is the conjugation of the compound with various substances such as glucuronic acid, glycine, sulfate and acetate. Conjugation with glucuronic acid has assumed major clinical significance in the past few years, and we know that the two enzymes that bring about this reaction, glucuronyl transferase and uridine diphospho glucose dehydrogenase, are present in low concentration in premature and full-term infants during the first few days of life.[7,25] The enzyme level bears a direct relation to the body's ability to excrete bilirubin and thus to the production of kernicterus in the neonatal period.

We also know that certain drugs can influence this portion of bilirubin metabolism by interfering with its conjugation with glucuronic acid or with the binding of bilirubin to serum albumin, which is a preliminary step to conjugation. Synthetic preparations of vitamin K when given in large doses to the mother have resulted in potentiation of serum hyperbilirubinemia.[1,13,18,26] This is primarily the result of increased hemolysis, probably related to an instability of blood glutathione in newborns and premature infants with subsequent leakage of potassium from the red cell. The glutathione seems necessary for maintenance of the gradient in concentration of the two sides of the cell membrane. The elevated serum bilirubin places a heavy load on the poor conjugating mechanism in these infants.

The long-acting sulfa drugs such as sulfamethoxypyridazine (Kynex®) and sulfadiamethoxine (Madribon®) can persist for days in detectable concentrations in the blood of newborn infants after administration to a mother before delivery.[30,38] This can interfere with bilirubin conjugation and excretion by displacing the bilirubin from its protein binding. The free "indirect" bilirubin can then apparently injure the extrapyramidal nuclei of the brain. Kernicterus has resulted at bilirubin levels of 12 to 15 mg. per 100 cc. in newborns who received sulfa therapy. The salicylates and phenergan can act in a manner similar to that of the sulfas, although evidence that they can have a deleterious effect when given to mothers before delivery is not available as yet. Chlorpromazine (Thorazine®) may possibly interfere with bilirubin metabolism by binding of serum albumin. It is a common drug in use for the analgesia of labor, in combination with other drugs, and will have to be evaluated for this possibility of toxicity to the fetus.

Chloramphenicol has been shown to be conjugated with glucuronic acid in the course of its elimination from the body, and in the newborn this reaction may be delayed.[9,24,46] The hydrolyzed free chloramphenicol is toxic, and has been shown to cause an increased neonatal mortality when used in dosages over 50 mg. per kilogram of body weight per day or 25 mg. in newborn infants or 25 mg. per kilogram per day in premature infants. It apparently passes the placenta poorly, which may be the reason for its seeming innocuousness when used during pregnancy.

Certain drugs have been noted to produce ill effects on the fetus when administered earlier in pregnancy. Our present criteria for recognizing such effects are very crude; but even so, we have evidence of a potent teratogenic effect of the anticancer and antileukemic drugs, and a definite effect of the antithyroid drugs as well as radioactive iodine. The masculinization of newborn girl babies by various hormones given to mothers early in pregnancy is also well documented.

Aminopterin is perhaps the best known of the drugs with teratogenic effects. Because of its pronounced toxicity to the fetus, it has been used by some physicians to induce therapeutic abortions.[32] However, some hardy fetuses have survived this therapy and have had extensive malformations at birth. Other drugs in this general class have been incriminated, and in animal experiments several have produced fetal death or malformations. Smith[37] reviewed these studies well. This effect seems to be directly related to dosage. Cortisone has been shown to produce malformations in rats when given in high dosage. There is no evidence that ill effects on the fetus have occurred in humans. Radioactive iodine has resulted in fetal death and extensive malformations. Goldstein[14] reported a case of a woman with metastatic thyroid carcinoma who had I^{131} therapy and six days later was delivered by hysterotomy of an 18 weeks old fetus. The infant was malformed and its thyroid gland was found to contain a large amount of radioactive iodine. Valensi[44] reported a woman treated for toxic goiter with I^{131} who subsequently stopped menstruating, had an uneventful pregnancy and was delivered of a premature infant with extensive congenital anomalies that died shortly after birth. These instances would suggest that radioactive iodine is a dangerous drug for the fetus.

There is ample evidence that iodides and the thiouracils may produce goiter or hypothyroidism in the fetus.[6,11,27,34] From the pediatrician's point of view a little hyperthyroidism is much preferable to the attendant increased fetal mortality and incidence of malformations seen in infants born to hypothyroid mothers (that is, hypothyroidism not secondary to surgical operation). It is of interest in connection with the effect on the fetal thyroid that the thyroid tissue in the fetus does not seem to take up iodine during the first three or four months of gestation.[2,28]

Androgens, progestins and estrogens have all been incriminated as producing masculinization of female newborn infants of some mothers who had received the hormone during early gestation.[4,5,17,29,43] There has been some reluctance to accept that estrogens are a cause of this induced adrenogenital syndrome, but that the other substances are culpable is well documented. It has been shown that until after the seventh month of gestation, very little estrogen enters the fetal circulation in the normal situation. The criteria set down for a diagnosis of masculinization secondary to maternal hormone therapy are an exposure to one of these drugs during the pregnancy, a female sex chromatin pattern of the infant, normal urinary 17-ketosteroids, and no progression of the clinical manifestations.[19] These infants may have anatomic abnormalities of the external genitalia, although there are no reports of an abnormality of internal organs. One interesting case has been reported of an infant whose mother during gestation had received large doses of testosterone for 51 days early in pregnancy.[17] The infant had scrotal rugae, and urinated through the tip of a small phallus. The uterus, tubes and ovaries were normal. The sex chromatin pattern was female, and the urinary 17-ketosteroids normal.

One realizes of course that these drugs are commonly given to pregnant women and only occasionally do the foregoing manifestations occur. This suggests that there may be an abnormality of the mother's ability to metabolize progestins, androgens or estrogens respectively, or in the transmission of the hormone across the placenta.[47]

An interesting phenomenon described in the recent literature is the occurrence of withdrawal symptoms in infants born to mothers addicted to narcotics.[22,23,36,39] In such cases the mothers usually had had injections of the drug within a week of the delivery. The picture is a characteristic one: The infant is decidedly irritable, may be flushed, and has a high-pitched, constant, cerebral cry. Convulsions may occur. The mortality rate in such infants is definitely increased unless the condition is recognized and promptly treated. This diagnosis may be difficult because of attempts to conceal the addiction. Infants born to mothers addicted to alcohol may show milder symptoms suggesting a similar withdrawal syndrome.

The barbiturates are a group of drugs capable of severely depressing the fetal respiratory centers. A study of pregnant women in the fourth to the seventh month of gestation who had hysterotomy for various reasons after receiving an ordinary sedative dose of the drug showed that the concentration in fetal blood reached an equilibrium with maternal blood within as little as 30 minutes after an intramuscular injection. The elimination of the drug was as prompt with the fetus as with the mother. The transfer of pentothal after intravenous injection has been shown to occur almost immediately. Fetal blood concentration was found to be 74 per cent of that in the maternal blood level one minute after injection. This certainly makes pentothal seem worthy of great respect, although a number of reports recommend it as a good obstetrical anesthetic agent in selected cases. There has been no evidence of appreciable fetal depression when the drug was given by physicians experienced in its use.

A number of other drugs have been observed to produce undesirable effects on the fetus when given to the mother. Reserpine in 16 per cent of 77 mothers who received the drug before delivery caused considerable nasal stuffiness in the newborn infant.[8] This may result in feeding difficulties for the first few days of life and is ameliorated by decongestant nose drops administered for two or three days. Veratrine may produce fetal bradycardia. Hexamethonium may cause symptoms in the newborn identical to those of intestinal obstruction. A careful history can prevent an unnecessary operation.[45]

Dicumarol and related anticoagulant drugs may produce intracranial bleeding with possible permanent brain damage.[42] Phenobarbital, the sulfa drugs and salicylates may cause bleeding in the fetus when given to mothers during pregnancy; this in some cases has been associated with a decreased level of Stuart factor.

Tranquilizers can potentiate analgesics and increase central nervous system depression.[20] Nalline also can be a depressant, especially when given in conjunction with ether anesthesia. However, it can be lifesaving to the infant depressed from morphine or its derivatives administered during labor.

Nicotine has been said to produce premature beats in the fetus. Digitalis is relatively nontoxic and little of a pharmacological dose passes the placental barrier; what little does pass is for the most part chemically altered and its effect greatly reduced. However, when related to concentration by weight of cardiac tissue, the fetal heart has a concentration at least equal to maternal tissue levels.[10,16]

The effects of the various anesthetic gases as depressants are well known and need no repetition here.[16]

Pharmacological studies of the antibiotics in general have shown that they pass the placenta fairly easily, although the fetal concentration is usually from one-half to two-thirds of the maternal blood concentration. There is a report of a case in which penicillin given to a mother caused severe anaphylactic shock which resulted in fetal death. This occurred in the ninth month of gestation.[21] An interesting case report which appeared in 1958 suggests that streptomycin passes the placenta and may result in deafness in the infant.[3] The child's mother in that case received the streptomycin for tuberculosis therapy.

While further investigation in the area of drug effects on the fetus continues, we must exercise great caution in the use of chemical therapy during pregnancy. We are fortunate that common drugs such as aspirin and phenobarbital have not produced more problems. Because the use of drugs during pregnancy is increasing rapidly, obstetrical and pediatric histories must include detailed reference to any therapy given, especially when complications arise in the fetus or newborn.

University of California at Los Angeles Medical Center, Los Angeles 24.

REFERENCES

1. Biskind, J. I., and Herman, I.: Vitamin K, its relationship to unexplained jaundice in the newborn, Obstet. and Gynec., 13:41, Jan. 1959.

2. Benson, R. C., et al.: Thyroid function in pregnancy, Obstet. and Gynec., 14:11, June 1959.

3. Bolletti, M., and Croatto, L.: Deafness in a five-year-old girl resulting from streptomycin therapy during pregnancy, Acta. Paediat. Lat., 11:1, 1958.

4. Bongiovanni, A. M.: Comments on estrogen induced female pseudohermaphrodism in the newborn, Year Book of Pediatrics, 375, 1958.

5. Bongiovanni, A. M., et al.: Masculinization of the female infant associated with estrogen therapy alone during gestation; four cases, J. Clin. Endocr., 19:1004, 1959.

6. Branch, L. K., and Tuthill, S. W.: Goiter in twins resulting from propylthiouracil given during pregnancy, Ann. Int. Med., 46:145, 1957.

7. Brown, B., and Zuelzer, W.: Studies on the neonatal development of the glucuronide conjugating system, J. Clin. Invest., 37:332, March 1958.

8. Budnick, I. S., et al.: Reserpine therapy during pregnancy, A.M.A. J. Dis. Child., 90:286, Sept. 1955.

9. Burns, L. E., et al.: Fatal circulatory collapse in premature infants receiving chloramphenicol, N.E.J.M., 261:1318, Dec. 24, 1959.

10. Dimond, E.: Digitalis, Thomas, Springfield, Ill., 1957.

11. Elphinstone, N.: Thiouracil in pregnancy, Lancet, 1:1281, June 27, 1953.

12. Foulger, J. H.: Chemicals, Drugs and Health, Thomas, Springfield, Ill., 1959.

13. Gleiss, J.: Methyl-naphthochinon-Gaben and Gelbsucht bei unreifen Neugeborenen, Mschr. Kinderheilk., 106:58, 1958.

14. Goldstein: Effect of radioactive iodine therapy during pregnancy; case report, So. Afr. M. J., 1:239, 1958.

15. Goodfriend, M. J., et al.: Effects of maternal narcotic addiction on the newborn, Am. J. Obst. and Gynec., 71:29, Jan. 1956.

16. Goodman, L. S., and Gilman, A.: Pharmacological Basis of Therapeutics. Second edition.

17. Gruenwaldt, E., and Bates, T.: Non-adrenal female pseudohermaphrodism after administration of testosterone to a mother during pregnancy, Pediatrics, 20:503, 1957.

18. Haupt, H., and Krebs, H.: Ueber Wirkring and Nebenwirkungen von Vitamin K-Praeparaten bei der Anwendung im Neugeborenenalter, Z. Kinderheilk., 81:330, 1958.

19. Hillman, D. A.: Masculinization in the newborn female infant secondary to maternal hormone therapy, Canad. Assn. M. J., 80:200, 1959.

20. Hodges, R. J. H., and Bennett, J. R.: Some contraindications to the use of chlorpromazine, J. Obst. Gynec. Br. Emp., 66:91, 1959.

21. Kosim, H.: Intrauterine fetal death as a result of anaphylactic reaction to penicillin in a pregnant woman, Dapim Refuim, 18:136, 1959.

22. Krause, et al.: Heroin addiction among pregnant women and their newborn babies, Am. J. Obst. and Gynec., 75:754, April 1958.

23. Kunstadter, R. H., et al.: Narcotic withdrawal symptoms in newborn infants, J.A.M.A., 168:1008, Oct. 25, 1958.

24. Lambdin, M. A., et al.: Chloramphenicol toxicity in prematures, Pediatrics, 25:935, 1959.

25. Lucey, J. F.: Review article: Hyperbilirubinemia, Pediatrics, 25:698, April 1960.

26. Lucey, J. F., and Dolan, R. G.: Hyperbilirubinemia of newborn infants associated with the parenteral administration of a vitamin K analogue to the mothers, Pediatrics, 23:553, 1959.

27. Morris, D.: Transient hypothyroidism in a newborn infant, Lancet, 1:1284, June 27, 1953.

28. Myant, N. B.: Passage of thyroxine and triiodothyronine from mother to foetus in pregnant women, Clin. Sci., 17:75, 1958.

29. Nellhaus, G.: Artificially induced pseudohermaphroditism, N.E.J.M., 258:935, May 8, 1958.

30. Odell, G. B.: Dissociation of bilirubin from albumin, J. Pediat., 55:268, 1959.

31. Page, E. W.: Transfer of materials across the human placenta, Am. J. Obstet. and Gynec., 74:705, Oct. 1957.

32. Petersohn, K.: Aminopterin, ein oral wirksamer abortivum?, Med. Klin., Berlin, 53:1405, Aug. 15, 1958.

33. Ploman, L., and Persson, B. H.: On the transfer of barbiturates to the human fetus and their accumulation in some of its vital organs, J. Obst. and Gynec. Br. Emp., 64:706, 1957.

34. Riley, I. D., and Sclare, G.: Thyroid disorders in the newborn, Brit. M. J., 5025:979, April 27, 1957.

35. Rogers, J. B., et al.: Placental alterations in toxemia of pregnancy in guinea pigs, Lab. Invest., 7:614, 1958.

36. Schneck, J.: Narcotic withdrawal symptoms in newborn infant resulting from maternal addiction, Pediat., 52:584, May 1958.

37. Smith, R. B. W.: Hodgkins disease and pregnancy, A.M.A. Arch. Int. Med., 102:777, 1958.

38. Sparr, R. A., and Pritchard, J. A.: Maternal and newborn distribution and excretion of Kynex, Obst. and Gynec., 12:131, Aug. 1958.

39. Steg, N.: Narcotic withdrawal reaction in the newborn, A.M.A. J. Dis. Child., 94:286, Sept. 1957.

40. Taylor, E. S.: Effect on fetus of various drugs given during pregnancy, Am. J. Obst. and Gynec., 74:716, Oct. 1957.

41. Thiersch, J. B.: Therapeutic abortion with a folic acid antagonist, 4-aminopteroyl glutamic acid administered by the oral route, Am. J. Obst. and Gynec., 63:1298, 1952.

42. Toulouse, R., et al.: Accidents hemorragiques chez des nouveau-nes dont les meres ont eu un traitement anticoagulant au cours de la grossesse, Rev. Franc. Gynec., 54: 203, 1959.

43. Uhlig, H.: Fehlbildungen nach Follikelhormonen beim Menschen, Geburtsh. u. Frauenheilk., 19:346, 1959.

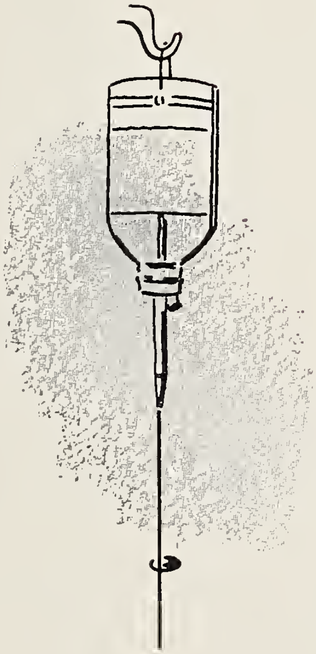
44. Valensi, G., and Nahum, A.: Effect on fetus of radioactive iodine given during gestation, Tunisie Med., 36:69, 1958.

45. Von Bruecke, F. v.: Schadegungen der Frucht durch Artznermittelgebrauch der Mütter, Munch. Med. Wschr., 100:560, April 11, 1958.

46. Weiss, C. F., et al.: Chloramphenicol in the newborn infant: A physiologic explanation of its toxicity when given in excessive doses, N.E.J.M., 262:793, April 21, 1960.

47. Wilkins, L., et al.: Masculinization of the female fetus associated with administration of oral and intramuscular progestins during gestation: Non-adrenal female pseudohemaphrodism, J. Clin. Endocr., 18:559, June 1958.

48. Williams, R. T.: Detoxication Mechanisms, John Wiley and Sons, New York, Second Edition, 1959.



Contraception

Effectiveness of Diaphragm and Jelly in a Well-Motivated Group of Clinic Patients

**HENRY J. OLSON, *M.D.*, LUCILLE WOLF, *R.N.*,
DOROTHEA BEHNE, *M.D.*, JERRY UNGERLEIDER, *M.D.*,
and EDWARD T. TYLER, *M.D.*, Los Angeles**

• With the increasing availability of new forms of contraception it is of importance to relate data obtained with new techniques to that obtained with diaphragm and jelly. This report provides statistical information relative to incidence of pregnancy in a relatively carefully-controlled group of clinic patients. Eighteen pregnancies occurred among 659 patients who used the method for a total of 7,353 cycles.

For several years the Los Angeles Planned Parenthood Clinic has been studying a variety of new, experimental methods of conception control. During this period many of the patients, for a variety of reasons, have employed the so-called "standard" contraceptive method—diaphragm and jelly. However, we have not previously reported any data relative to this method. Therefore, when we were asked about two years ago to evaluate the use of diaphragm with a new jelly,* we proceeded with a controlled study of this method in the hope that it would provide comparative data relative to newer methods.

The actual clinical effectiveness of any contraceptive technique in a Planned Parenthood Center is dependent, of course, upon many factors, including the kind of clinic, the personnel and, of more importance, the patients' motivations and the particular method used. Since the way the clinic operates is a factor, a brief discussion of the routine of the Los Angeles center is in order.

It is the custom of the Los Angeles Planned Parenthood Center to provide patients with a choice of several contraceptive methods, provided there is no contraindication to a specific method. For example, patients are given choices of diaphragm and jelly, gel or cream alone, suppositories and various other miscellaneous local methods and the much-publicized oral method. Each of the methods available is described in detail during a group lecture given by a senior nurse to all new patients at each clinic session. During the lecture the advantages and disadvantages of each method are described and patients' questions are welcomed. When the patient decides on a specific method, one of the nurses gives her individual instruction in the use of it. A large proportion of women attending the Los Angeles Center are postpartum patients who have elsewhere requested referral for contraception. Therefore, one might infer that, in general, the patients herein discussed are well motivated both as to a wish for contraception and as to method. This is important to emphasize since motivation in this series may be considered far greater than in studies where "missionary" work of some kind is being attempted. In the latter instances, efforts are made to encourage contraception by people—for example, in overpopulated areas—who may not be particularly interested in it.

We are also fortunate in having a staff of persons who are very efficient in instructing patients in the use of various methods, stressing the need for continuous use and achieving a good degree of rapport with patients. This, of course, also leads to a better degree of effectiveness, regardless of the method.

With the current availability of several of the newer methods, there has been decreasing demand for the diaphragm and jelly method. This has resulted from word-of-mouth information passed along from patient to patient. Seven or eight years ago, perhaps 90 per cent of clinic patients used the diaphragm and jelly method, now no more than about 20 per cent use it; and those who are still using it are persons who, having done so successfully for some time, are reluctant to change, patients who were specifically referred to the clinic for diaphragm and jelly by physicians or postpartum centers, or patients who have long felt that diaphragm and jelly is the standard method or have been led to believe this.

During the period from October 1, 1957, to July 31, 1959, a total of 659 women were given and used

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*Lanesta Gel, supplied through the courtesy of the George Breon Company.

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TABLE 1.—*General Data Concerning 659 Patients in Group of Users of Diaphragm and Jelly Method of Contraception*

1. *Age Groups (Years):*	
14 to 19	154
20 to 24	281
25 to 29	249
30 to 34	207
35 to 39	98
40 to 44	16
45 and over	8
2. *Nationalities:*	
Negro	605
White	284
Mexican	114
Others	10
3. *Education:*	
Elementary (grades 1 to 6)	369
Junior High (grades 7 to 9)	297
Senior High (grades 10 to 12)	281
College	46
Education (continued):	
Unschooled (no formal education)	20
4. *Previous Marriages:*	
Husbands	42
Wives	61
5. *Years Married:*	
1 to 5	446
6 to 10	311
11 to 15	168
16 to 20	71
25 to 30	3
6. *Occupation:*	
Housewives	765
Skilled trades	73
Unskilled trades	49
Professional	107
Students	19
7. *Coital Frequency:*	
Less than once a week	169
Once to twice a week	351
Three to six a week	430
Seven and over a week	63
8. *Previous Methods of Contraception Control:*	
No protection	138
Withdrawal	167
Diaphragm	101
Safe period	55
Cr, gels, jelly alone	81
Douching only	187
Films	18
Others	27
Condoms	181
Suppositories	46
Oral	8
Buttons	4

TABLE 2.—*Reproductive Data Concerning 659 Patients in Group of Active Uses*

9. *Previous Pregnancies:*	
None	162
One	161
Two	301
Three	111
Four	74
Five	66
Six	38
Seven	28
Eight	30
Nine	16
Ten and over	26
10. *Incomplete Pregnancies:*	
Abortions	739
Stillbirths	31
Ectopic pregnancies	9
Premature (nonsurvive)	27
11. *Number Living Children per Family:*	
None	52
One	199
Two	126
Three	98
Four	161
Five	83
Six	76
Seven	82
Eight	65
Nine	40
Ten and over	46

diaphragms and the specific gel employed in this study.*

Warner evaluated this new contraceptive gel in humans, particularly with reference to vaginal tolerance.[4] After prescribing the gel for 149 women who inserted it into the vagina on 21 consecutive days, Warner concluded: "The gel was well tolerated by the genital mucosa, subjectively and objectively, and there were no significant hematological alterations demonstrated by blood counts performed before initiation and upon completion of this study."

Warner further stated: "A total study of 162 women who used the gel over varying periods of time to 12 months indicates that this gel is well tolerated when used for extended periods of time and well accepted by patients."

Berberian, Coulston and Slighter[2] also investigated the toxicity of the gel in laboratory animals. They stated: "The gel was not irritating when topically applied to the abraded skin of rabbits. It produced no vaginal irritation or alteration in mucosal architecture or secretions when introduced into the vagina of monkeys three times weekly for 41 weeks." Further, these investigators noted that 11 men applied the gel liberally to penile surfaces for eight hours or longer and no irritation of any kind was observed.

The maximum period of use for which data are available in the present study was 22 months. Twenty-nine of the 659 patients in the group studied used it that long. The data on others were for lesser periods (Table 1). General information regarding the 659 subjects is given in Table 1, and reproductive data in Table 2.

Patients receiving this method were given the usual instruction on applying the jelly and diaphragm which is considered routine for this method. They were told to make sure the diaphragm and jelly were applied exactly according to instructions. Clinic nurses teach the method in the following manner:

Following bimanual examination by a physician. the patient is requested to lean on her left elbow and examine herself so that she may become familiar with the location of the cervix and the pubic arch. When fully taught, she recognized the lower edge of the pubic bone and the anterior

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*The formula is as follows: Sodium chloride, 10.0%, ricinoleic acid, 1.0%; chlorindanol (7-chloro-4-indanol), 0.1%; sodium lauryl sulfate (Duponol PC), 0.2%; glycerin, U.S.P., 10.0%; tragacanth, 2.5%; methyl-p-hydroxybenzoate, 0.1%; calcium hydroxide, U.S.P., 0.027%; perfume, 0.006%; lactic acid to pH 4.8-5.0.

TABLE 3.—*Pregnancies Occurring During Use of Method by 659 Patients (Pregnancies—18)*

1. Pregnant on admission	5
2. Planned pregnancies	4
2 patients used method 6 each month and each became pregnant first month when discontinued.	
1 patient used 9 months and became pregnant second month when discontinued.	
1 patient used 13 months and became pregnant fourth month when discontinued.	
3. Planning a pregnancy and as of survey date had not conceived	2
1 patient used 9 months and had been trying three months.	
1 patient used 5 months, been trying 5 months and had not conceived yet.	
4. Unplanned pregnancies	7
1 patient used 14 months "then started to practice withdrawal in her not fertile period" became pregnant second month.	
1 patient used 8 months, ran out of supplies, so used douching and became pregnant first month.	
2 patients used for 4 months each, ran out of supplies; 1 used condom, pregnant first month; and other tried douching and pregnant second month.	
2 patients used 3 months each—1 used vaseline, pregnant first month; the other used "quinine capsules vaginally"—pregnant second month.	
1 patient used 7 months and "church made her stop."	
	18

vaginal wall. Next the patient is shown how the diaphragm is correctly placed, and how it is possible for it to be incorrectly placed.

The patient is then given the diaphragm and told to squeeze about one teaspoon (or 1½ inches) of jelly from the tube into the cap, "dome down," and to spread a small amount of the jelly around the edge of the diaphragm.

The diaphragm is compressed and inserted, pushed down as far as possible until the farther end slips into position in the space behind and below the cervix, and then the upper or top edge is pushed behind the pubic bone to hold the diaphragm in place.

After the diaphragm has been put into place the patient is taught to check, with her finger, feeling the cervix through the diaphragm. Coitus may take place immediately or within six hours. If coitus should take place more than six hours later, or is repeated, half an applicator of jelly is inserted well into the vagina with a downward motion. The diaphragm is not to be removed for at least six hours following coitus and may remain longer. To remove the diaphragm, the patient inserts the index finger over the top of the rim of the diaphragm and rotates the hand, withdrawing the diaphragm with a pulling or "flipping" motion. Douching is not necessary and may be omitted if desired. The patient is instructed to wash the diaphragm with toilet soap and warm water following use, and to inspect it for holes. When dry, it should be powdered with corn starch or pure talcum powder.

We do not now uniformly instruct our patients to add an application of jelly following insertion of the diaphragm, although at one time we did advise this technique.

Almost all patients visited the clinic at from two and one-half to three and one-half month intervals. The remaining patients were contacted on an average of every three months by phone, mail or home call. Exceptional cooperation of those patients participating was noted by surveyors.

RESULTS

During the study, 18 pregnancies occurred. Of these, five were noted very shortly after the method was prescribed and it is possible the patients were pregnant before the prescription, although no diagnosis of this was definitely established on the first visit. Therefore they are included in the data according to the usual statistical procedure. As we and others have emphasized in previous reports,[1,3,5] distinguishing between patient-failure and method-failure is extremely difficult. Hence we followed the accepted practice of grouping all failures together. In this connection it is argued by those advocating this grouping that even in cases where patients may admit failure to use a specific method upon occasion during a cycle, it would be erroneous to assume that this was the occasion when conception occurred.

The details of all pregnancies are given in Table 3.

921 Westwood Boulevard, Los Angeles 24 (Olson).

REFERENCES

1. Behne, D., et al.: Clinical effectiveness of a new vaginal contraceptive cream; a preliminary report, W. J. Surg., 64:152, 1956.

2. Berberian, D. A., Coulston, F., and Slighter, R. G.: A New Antiseptic Agent. In press.

3. Tyler, E. T., and Olson, H. J.: Fertility promoting and inhibiting effects of new steroid hormonal substances, J.A.M.A., 169:1843-54, April 18, 1959.

4. Warner, M. P.: Tolerance studies with a new contraceptive gel. Submitted for publication.

5. Wolf, L., Olson, H. J., and Tyler, E. T.: Observations on the clinical use of cream-alone and gel-alone methods of contraception, Obstet. and Gynecol., 10:316, 1957.

Radiation: Medical Diagnostic Uses

DELL F. DULLUM, *M.D.*, Berkeley

• Use of radiologic procedures in diagnosis now contributes a significant dose of ionizing radiation to our population. Whether this presents a real risk to the health of the present and future population cannot be determined with certainty from evidence available at this time. Hence, it appears proper to keep the dose to every patient as low as practical consistent with good medical practice. The average dose can be significantly reduced by having more physicians apply the known techniques for minimizing the exposure to the patient.

The medical profession has a direct professional concern for the actual or potential risk of damage resulting from the radiation that patients are exposed to during diagnostic x-ray procedures, since these procedures constitute the largest single man-made source of genetically significant radiation our population is now exposed to.

It is important to distinguish two distinctly different types of radiation effects—somatic effect, in which the damage affects the health of the person irradiated, and genetic effect that is capable of producing constitutional defects in future progeny over many generations.

ALL LIVING THINGS have existed in an environment of *natural background radiation* since the beginning of creation. Since 1895, medical and industrial uses of x-rays and radium have contributed significantly to this dose, and radioactive fallout has added a little since 1945. It is important to consider the relative dose to the human population from these various sources. Of major importance is the genetically significant dose to the gonads from the moment of conception to the age of 30 (when reproduction is estimated to be 50 per cent complete). In a recent authoritative report[4] this 30-year genetically significant dose was estimated at about 3.7 r (range 2.4 r to 5 r) from natural background, about 4.2 r (1.2 r to 7.2 r) from medical diagnostic uses, and about 0.05 r from radioactive fallout from all weapon-testing to date.

The radiation the bone marrow receives is important as a possible cause of leukemia. In the previously mentioned report[4] the average marrow dose over a 70-year period was estimated at about 8.5 r (5 r to 12 r) from all natural sources, about 5 r (3.5 r to 7 r) from medical diagnostic uses, and 0.3 r from radioactive fallout from all atomic weapon tests to date, the latter dose applying when equilibrium is finally reached after a period of many years.

The radiation to which the population is exposed arises from either natural background or from man-made sources, each contributing approximately half of the genetically significant radiation. Of the man-made portion of this genetically significant radiation, medical uses (almost entirely from diagnostic x-ray procedures) contribute approximately 85 per cent, radioactive fallout, television, and luminous clock and watch dials each contribute approximately one per cent, while occupational and industrial exposure contribute the remainder.

Thus it is apparent that the medical uses of radiation are responsible for a major portion of the total radiation dose of both genetic and somatic significance. Estimates of the dose contributed by medical uses are extensively reported in the United Nations Report.[14] These estimates are admittedly subject to many variables, and the accuracy of these estimates has been questioned by many authorities.

BIOLOGICAL EFFECTS OF RADIATION

The concept of a *threshold dose* of radiation—that is, the dose below which there will be no injury—is of significance, for if there is no threshold for a certain effect, then any dose, no matter how small, will have some effect. Most authorities agree that there is no threshold for genetic effects. However, the question as to whether there is a threshold for somatic effects such as leukemia has not been agreed upon because most somatic effects are known to be reversible at least to some degree.

The *proportional relationship between dose and effect* is also of practical significance. Although the frequency or magnitude of an effect ordinarily increases as the dose increases, it is often impossible to determine whether the increase is strictly proportional, that is, "linear." Such relationship is more and more difficult to prove as the dose is decreased to lower and lower levels, making the prediction of the effects of very small doses quite uncertain.

PERMISSIBLE RADIATION DOSE

Consideration of allowable radiation dose was concerned initially with safe working conditions. It was assumed that the radiation worker had a certain

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tolerance, below which there would be no risk of injury. Subsequently the concept of a Maximum Permissible Dose (MPD) was developed, based on the belief that even the least amount of radiation probably produces a biological effect. Although the possibility of injury could not be ruled out, it was believed that a dose could be stated (MPD) for which the risk is so low that it is not expected to cause appreciable bodily injury to a person at any time during his lifetime. However, it was urged that the exposure should be kept as low as possible consistent with practical protective measures. This MPD was not to be all used up merely because it was permitted.

More recently the concept of MPD has been broadened to include the danger of genetic damage to the population at large and to include radiation from sources other than occupational exposure, such as the natural background radiation and the radiation wilfully applied to patients by the healing profession. Recommendations were formulated by advisory agencies such as the National Academy of Science (NAS) in 1956[7] and more recently in 1960[8]. I quote from the latter report: " . . . the committee continues to recommend that for the general population the average gonadal dose accumulated during the first thirty years of life should *not* exceed 10 r of man-made radiation, and should be kept as far below this as practical." The 10 r limit includes the man-made radiation wilfully applied to patients by the healing professions. While the NAS recommendation for the total population is based primarily on the risk of genetic damage, the report states that "it seems that the limitation of exposure suggested by the committee on genetics should be adequate for purposes of establishing that no perceptible somatic effect will occur, although theoretically minor shortening of life span or a slightly increased incidence of tumors cannot be excluded as a possibility."

The National Committee on Radiation Protection (NCRP) recently made recommendations[10] concerning MPD for the total population from the standpoint of somatic as distinguished from genetic effects. I quote the report in part: "Although it is not our responsibility to determine the exact level, we believe that the population permissible somatic dose from man-made radiations, *excluding medical and dental sources* (italics mine), should not be larger than that due to natural background radiation, without a careful examination of the reasons for, and the expected benefits to society from a larger dose. . . ." It goes on to say: "Recommendations regarding a maximum permissible level for medical and dental exposures to the patient are not given because for somatic effects of radiation the possible harm and prospective benefits occur in the same individual in contrast to radiation involving genetic material. The committee urges that continual caution be exercised to maintain radiation for medical and dental purposes at the lowest feasible level."

The Federal Radiation Council (FRC), formed in 1959 by Public Law to provide federal policy on human radiation exposure, formulated a Radiation Protection Guide (RPG)[4] for the guidance of federal agencies in radiation protection activities. The guide relates to normal peacetime operations and ". . . is not intended to apply to radiation exposure resulting from natural background or the purposeful exposure of patients by practitioners of the healing arts."

It has been noted above that the dose to the patient from medical uses may or may not be included in the consideration of MPD for the total population from either a genetic or somatic standpoint. The MPD recommended by the NAS,[8] which is based primarily on the risk of genetic damage, includes the dose to the patient in medical uses. In this case the MPD specifies the average per capita dose and not the dose that may be applied to the individual patient. Other agencies such as the FRC[4] have excluded from consideration the dose to the patient on both an individual and average per capita standpoint on the basis that these depend on the clinical situation and are matters of medical judgment. This in no way implies that the dose to the patient is of no significance, as all agencies are specific in their recommendation that this dose from medical uses be kept as low as possible consistent with good medical practice.

The somatic and genetic effects of radiation have been extensively documented in the United Nations Report.[14] It will be recalled that radiation produces genetic damage by way of mutations in the genetic material in the reproductive cells of the gonads. These mutations are almost always undesirable, are cumulative, permanent and heritable, being passed on to future generations. Radiation does not cause a different type of mutation or damage; it only increases the frequency of mutations, adding to the total number of the many mutations constantly occurring from many other sources. Therefore the detection of genetic effects specifically due to radiation in doses we are concerned with here is essentially impossible. Although the effect may in some cases be expressed as a specific congenital defect, most authorities agree that the genetic damage of major importance will be expressed as general effects such as a decreased life-span, a decreased well-being, and a decreased fertility of future generations. These general effects will in most instances be delayed and spread over many generations. For this reason it will not be possible to evaluate the genetic damage by merely looking for any increasing incidence of monsters or other detectable defects in either the present or future generations.

The somatic effects of radiation of the type and dose of the usual diagnostic procedure include among others the possible risk of an increased rate of aging, a shortened life span and an increased incidence of neoplasm. Investigators[14] have demonstrated those effects in animals. Although a life-shortening effect has not been documented in man in the dose range of current diagnostic procedures or permissible occupational exposure, it is not reasonable to assume that this effect could not or does not exist.

MEDICAL USES

The medical and allied professions can be justly proud of their role in not only the development and expansion of the uses of radiation in the healing professions but also the development of improved equipment and techniques designed to keep the radiation dose to the patient as low as possible. I quote the NAS report of 1960[8]: "The medical and dental professions are commended for their continuing efforts to reduce diagnostic and therapeutic radiation exposures to the lowest levels consistent with sound medical practice."

The medical profession was told as recently as 1959 by Scott,[12] a prominent radiologist, that the gonadal dose from diagnostic examinations can be reduced to one-fifth the present dose, and that ". . . the key to implementing the safe use and control of medical radiation lies in the education of all practicing physicians in the fundamentals of genetics, radiobiology and radiology."

The radiation the medical profession uses is no different from any other kind of radiation. It is not reasonable to imply or state that radiation is harmless or even beneficial merely because it is applied by physicians. It is equally not reasonable to state that since there is presumably biological effect from even the smallest dose of radiation, a medical use is therefore a hazard. Risk and benefit are relative terms. The practical recommendation has been more wisely stated thus: That the radiation be used, either in diagnosis or therapy, with due consideration for a *reasonable balance between the expected benefit and the estimated risk.* The radiation is beneficial only in relation to the expected benefit to either the patient or to society as a whole. This, of course, is the basis for the medical use of radiation.

If the exposure is not necessary to the actual needs of the medical situation, it is *unnecessary radiation* and should be avoided. This implies that a procedure which is not clinically justified should not be done. It also implies that for any particular diagnostic procedure any radiation that is not required (for example using a larger field than is actually necessary) is *unnecessary radiation.*

From evidence available at present it is obvious that the patient should not be denied the many advantages of radiation in either diagnosis or therapy provided the risk, whatever it may be, is balanced by the expected benefit. It follows that any physician permitting, requesting or actually performing the procedure must assure himself that the procedure is necessary. It also follows that the procedure should be conducted with the necessary skill and competence to keep the dose to the patient to the minimum and provide a maximum of information or benefit.

The somatic effect of radiation as used in diagnostic radiology varies principally with the dose and the region of the body irradiated. Any measures that decrease the dose, such as removing the useless soft radiation by proper filtration or by limiting the field to the actual area of interest by proper cones, will decrease the risk. These protective measures are particularly important in examinations involving the trunk. While the risk of somatic injury in the usual diagnostic procedure is probably negligible on an individual basis, considering the population as a whole the aggregate effect of even this small risk—such as an increased rate of aging, possible life shortening and a possible increased incidence of malignant disease—may be of considerable statistical significance.

The genetic risk of diagnostic x-ray relates directly to the dose to the gonads at any time before the end of the reproductive period of life. The genetic dose is a pooled dose, based on the total of the individual gonad doses but expressed as an average per capita dose. For a population group of one million, an annual average per capita gonad dose of one-tenth r can be based on varying doses to varying segments of the group, such as 100 r to each of 1,000 patients, 10 r to each of 10,000 patients, or one-tenth r to each of the million, with equal total genetic risk to the future progeny of this population group. Thus a single patient having a pelvimetry contributes as much gonad radiation and genetic risk to the population group as three thousand other patients who have a single chest film. About 85 per cent of the total population gonad dose from diagnostic procedures is contributed by the six or seven procedures involving direct irradiation of the lower abdomen and pelvis, although these procedures make up only about 10 per cent of the total volume of diagnostic radiology. Even for some of these pelvic examinations a small protective shield over the scrotum or ovaries where feasible would obviate nearly all the risk even though the protected gonads were within the larger field of direct radiation.

Of particular interest is the risk of antenatal maternal diagnostic procedures involving the abdomen and pelvis. Ford and coworkers[5] indicated that irradiation of the fetus during gestation correlated with an increased incidence of leukemia and other malignant diseases in childhood. The foregoing and other studies by Stewart and coworkers,[13] emphasize the need to minimize the dose to the fetus. The developing embryo is most sensitive to radiation in the immediate post-fertilization stage. As very early pregnancy may not be apparent even to the patient, elective diagnostic procedures involving the lower abdomen or pelvis of females during the active child-bearing age should preferably be limited to the ten to twelve days just after the beginning of the menstrual period.

Pelvimetry presents a unique risk in that there results not only a maternal regional and a fetal total body irradiation of somatic significance, but also genetically significant radiation to both the maternal and the fetal gonads. Osborn and Smith[11] estimated that pelvimetry in England and Wales in 1955 contributed 18.6 per cent of the genetically significant radiation from diagnostic procedures even though this examination constituted only one-tenth of one per cent of all radiographic examinations. This estimate was based on the assumption that pelvimetry was performed in less than 60 cases per 1,000 live births and that a 3-film technique was used.

The radiation hazard from chest x-ray examinations must be considered not only because of the large number of such examinations but also because the gonad dose may be decidedly increased by improper or careless techniques. If the gonads are protected from the primary beam either by limiting the beam to the chest area by a proper cone or by placing a protective shield over the lower abdomen and pelvis, the gonads will receive only scattered radiation. If the entire trunk is "sprayed" by the primary beam, the effect is essentially total-body irradiation and the gonad dose may be increased by a factor of a hundred or more.

The gonad dose in chest filming varies considerably with the use of different kinds of equipment. The gonad dose from a single 14 x 17 inch posterior-anterior film averages about one-tenth mr (thousandth of an r). The gonad dose from minifilms is increased by a factor as great as 20 when equipment of the older type is used, and by a factor of about 5 when the newer mirror-optics equipment is used. The foregoing estimates of gonad doses are based on using good equipment and confining the primary beam to the chest area.

The gonad dose in chest fluoroscopy varies decidedly with many factors such as the size of the shutter opening, but averages about 20 mr per minute. Thus one minute of chest fluoroscopy, using good technique, ordinarily gives a gonad dose equal to that from two hundred ordinary chest films.

A possible somatic hazard from chest x-ray procedures, including minifilms, cannot be excluded in even optimum radiation protection circumstances. The area of the body ordinarily irradiated in a chest film includes not only a large portion of the total active bone marrow but also the organs and tissues of the upper abdomen which also are relatively more sensitive to radiation. The total dose to any one patient having repeated examinations could be considerable. Moreover, the number of persons at risk is large as chest radiology is a large fraction of diagnostic practice. The UN Report[14] estimates that even if only 10 per cent of the population is examined each year by minifilm, this would contribute 20 per cent of the total population marrow dose from all types of diagnostic procedures. Other conventional chest films and chest fluoroscopy contribute about 10 per cent. These compare with an estimated 40 per cent contribution by examinations of the gastrointestinal tract and a 4 per cent contribution to the total marrow dose by x-ray examinations of the teeth.

INFORMATION AND EDUCATION

It is essential that any program of information and education regarding radiation hazards be conducted in a manner which will not cause a patient to either refuse or be denied a necessary x-ray procedure because of any unreasonable alarm or fear on the part of the patient or the physician. Boek and coworkers[2] in 1958 conducted a survey to determine the attitude of the general population in regard to routine chest x-rays. Of those questioned, 88 per cent considered the routine examination very important. 9 per cent were uncertain, and 3 per cent were opposed. Of the 12 per cent who were uncertain or opposed, less than half mentioned radiation exposure as the reason for their opinion.

The American College of Radiology, representing a segment of the medical profession most directly concerned with the medical uses of radiation, published in 1956 a special bulletin[1] to "clarify and comment upon" the reports issued by the National Academy of Science[7] and the British Medical Research Council[6] concerning the biological hazards of radiation. This special bulletin states in part:

"The American College of Radiology will cooperate with all efforts to encourage medical authorities of this country to initiate a vigorous movement to reduce the radiation exposure from x-rays to the lowest limit consistent with medical wisdom and in particular, that they take steps to assure that proper safeguards always be taken to minimize the radiation dose to the reproductive cells. It is obvious that anyone who owns x-ray equipment should be trained in its safe use, should know the output of his machine, should check these outputs at regular intervals and should be thoroughly familiar with the radiation dosage to those who are exposed."

Dr. Eugene P. Pendergrass, delegate to the American Medical Association House of Delegates from the Section on Radiology at the A.M.A. Clinical Session in December 1959 introduced the resolution approved by the delegates which called for programs of radiation safety inspection to be carried out under auspices of the local medical societies. That resolution, in its entirety, reads:

"WHEREAS, the benefits of radiological diagnostic exams are vital and irreplaceable in importance in the practice of clinical medicine, and

"WHEREAS, these benefits should be obtained with a minimum of radiation exposure and economy of radiation use, therefore be it

"*Resolved,* that the A.M.A. urge to all county and state medical societies the establishment and promotion of programs of inspection and testing of medical fluoroscopes and radiographic equipment. It is suggested that these programs be sponsored and arranged by the said county and state societies for their members."

The American College of Radiology has prepared and made available excellent authoritative material dealing with radiation protection. *A Practical Manual on the Medical and Dental Use of X-ray with Control of Radiation Hazards*[1] has been given wide distribution. A set of slides illustrating methods to control the hazards of x-ray examinations has been prepared by the college and is available for loan from the college or from the California State Department of Public Health. The American College of Radiology, in cooperation with the U. S. Public Health Service, supported by a grant from the Rockefeller Foundation, has prepared an excellent film *Radiation: Physician and Patient.*[1] Prints of this film may be obtained for showing from the college or from the California State Department of Public Health.

PUBLIC HEALTH AGENCIES

The California Atomic Energy Development and Radiation Protection Law has been summarized in a previous publication[3] with particular reference to the registration of sources of ionizing radiation as used by the medical profession in California. The California State Department of Public Health has already registered most of the users of radiation (physicians and others) in California and collected a large amount of information from them.

The data collected included much that concerned risk to the patient, that is, the many factors which contribute to or minimize *unnecessary* radiation. These include the type of practice, the type and general condition of the equipment being used, filtration of the primary beam, availibility of cones and collimating devices to limit the field of radiation, and the type and number of the potentially high-risk procedures performed at the installation. Evaluation of these factors will allow a reasonable estimate of the risk to patients examined among the many installations. An evaluation by the physician in charge of the installation may lead to his voluntary correction of those deficiencies he has noted and reported. The evaluation will be of use to public health agencies as a basis for determining the need for future radiation protection programs and their desirable scope.

Although the department has broad authority and responsibility to investigate any public health hazard, the recent radiation legislation requires only registration and has granted no *new* inspection or enforcement authority. At the time of this writing several local governments within California have enacted regulations which establish standards of equipment and practice and which provide for inspection and enforcement at the local level. Others are developing such regulations. Data provided by statewide registration will be made available to official state and local governmental agencies having a valid interest and responsibility in radiation protection. These data will be considered confidential within these state and local governmental agencies except for broad statistical purposes.

In the development of radiation protection programs, state and local public health agencies will request and welcome a cooperative program of consultation and assistance with the medical profession. The profession has in the past contributed to the essential leadership and guidance in developing standards of protection and principles of good practice in the use of radiation. A continuing guidance and support to promote profession-wide acceptance and compliance with these standards will be even more essential. The progressive training and education in radiation within public health agencies will depend not only on governmental budgetary and personnel support but also on the administrative, technical, and professional support of the medical and allied professions. As the experience of public health agencies increases in this field they can give gradually increasing support to those radiation protection programs initiated and developed within state and local medical societies. The hazards of radiological diagnostic procedures will decrease as techniques are improved and as more and more physicians apply them and the already known techniques for minimizing the patient's exposure. Equally, the benefits to patients and society will increase as safe and well-supervised radiation facilities are expanded and made available to the entire population. The public health responsibility at the state and local level will be one of encouraging the development and use of radiation by the healing professions in keeping with clinical needs, while at the same time encouraging and promoting a program which will protect the patient, the general population, and future generations from the *risk of unnecessary radiation* not required or necessary to the medical needs of the population.

St. Mary's Hospital, 2200 Hayes Street, San Francisco.

REFERENCES

1. American College of Radiology: (a) A comment on The Biological Effects of Atomic Radiation—Summary Reports, 1956, 20 North Wacker Drive, Chicago 6, Illinois. (b) A Practical Manual on the Medical and Dental Use of X-rays with Control of Radiation Hazard, Price 25 cents. (c) Radiation protection slides, $10.00 or on loan. (d) Film: Radiation: Physician and Patient, On loan.

2. Boek, W. E., Schults, H. H., Park, G. D., Cushman, D. S., and Parsons, Carolyn H.: Routine chest roentgenograms; fears and practice, N. Y. State J. Med., 59:3403-3407, Sept. 15, 1959.

3. Dullum, D. F.: Radiation: Registration of sources, Calif. Med., 92:198-200, March 1960.

4. Federal Radiation Council Report No. 1—Staff Report: Background Material for the Development of Radiation Protection Standards, May 13, 1960, 58016—U. S. Dept. of Commerce, Washington, D. C., 1960.

5. Ford, D. D., Patterson, J. O. S., and Trauting, W. L.: Fetal exposure to diagnostic x-rays, and leukemia and other malignant diseases in childhood, J. Natl. Cancer Inst., 22: 1093-1104, June 1959.

6. Medical Research Council: Hazards to Man of Nuclear and Allied Radiation, HMS Stationery Office, London, 1956.

7. National Academy of Sciences, National Research Council: Biological Effects of Atomic Radiation: Summary Reports, Washington, D. C., 1956.

8. National Academy of Sciences, National Research Council: Biological Effects of Atomic Radiation: Summary Reports, Washington, D. C., 1960.

9. National Bureau of Standards, U. S. Department of Commerce: Handbook 59, Permissible Dose from External Sources of Ionizing Radiation, Government Printing Office, Washington, D. C., Sept. 1954.

10. National Committee on Radiation Protection and Measurements—Report of the Ad Hoc Committee: Somatic radiation dose for the general population, Science, 131:483-486, Feb. 19, 1960.

11. Osborn, S. B., and Smith, E. E.: The genetically significant radiation dose from the diagnostic use of x-rays in England and Wales, Lancet, 1:949-953, June 16, 1956.

12. Scott, W. G.: The clinical radiologist and the problems of radiation hazards, J.A.M.A., 170:77/421-428, May 23, 1959.

13. Stewart, A., Webb, J., and Hewitt, D.: A survey of childhood malignancies, British Med. J., 1:1495-1508, June 28, 1958.

14. United Nations Scientific Committee on the Effects of Atomic Radiation, General Assembly, Official Records, 13th Session: Supplement No. 17 (A/3838), Columbia University Press, 1958.

Comment by R. R. NEWELL, M.D.

Concerning Dr. Dell F. Dullum's essay, Radiation: Medical Diagnostic Uses:

Dr. Dullum's thesis is that the hazards of diagnostic radiology are offset by the benefits of more efficient diagnosis leading to more effective treatment. This makes you think that the patient is submitting to a small but reasonable injury. The careful arithmetic of the National Committee on Radiation Protection has persuaded many persons to the same belief—even the members of NCRP itself. When it is written: "You may expose a person to a total of 15 r in a year, but not if this makes his total to date more than $(N-18) \times 5$ r, N being his present age," what should one think except that more would hurt him? That is not what the NCRP is trying to say, however. The most that we *can* say is that we do not know *but that* more could hurt him. We have calculated the chance of injury, but we've never *observed* any from such doses. If our calculations are correct the injury from, say, twice the MPD is unobservable. To increase the morbidity rate of leukemia to one-twentieth per cent per year (10 times normal) apparently required an exposure of 150 r to 250 r at Hiroshima, or in England about twice that much radiant energy as it was given as a larger therapeutic dose to only a part of the body. In these cases the injury was observable because more than a thousand persons were under observation after exposures exceeding the MPD by a factor of 10 to 50 or more.The genetic injuries are unobservable, too.

What we are demanding is not mere hygiene, it is discipline. We are demanding that radiologists use radiation effectively and for a proper purpose, and then only as much as is necessary. We are demanding that industrialists not let their radiation get to any of their employees above a certain amount or to others above a certain smaller amount. This will keep radiation injuries from appearing, and will keep our theoretical conscience clear about the calculated chances, both for the person irradiated and for the genetic future of the race. MPD is like the highway speed limit, except that on the highway we *can* observe the injuries.

The MPD is not a health rule; it's an operating rule.

R. R. NEWELL, M.D.

San Francisco

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Comment by DR. DULLUM

I have the following comments to make in reference to Dr. Newell's comments:

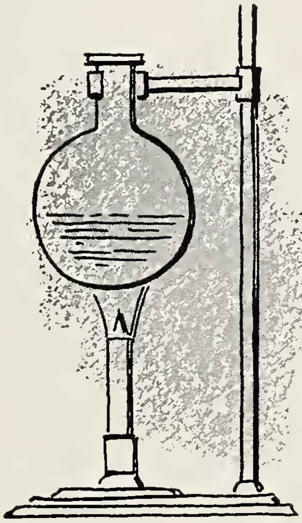
The NCRP, in establishing a MPD for occupational exposure, recommended a limit of 12 r per year, provided the accumulated exposure did not average more than 5 r per year after the age of 18. The NCRP states that this MPD presents a risk which is so low that it is not expected to cause appreciable injury to the individual. The MPD is not intended as an arbitrary level below which there is no possibility of injury or above which there is certainty of injury.

However, my article is concerned principally with the radiation dose to the patient. It is well known that a single diagnostic examination can give a total dose to the patient which is greater than the dose equivalent to 5 r total body dose, the *annual* limitation suggested for the radiation worker. It is also quite generally agreed that a dose of 5 r or even less is under certain circumstances associated with significant increase in the incidence of leukemia and other malignancies in the irradiated individual.

I am afraid that Dr. Newell's comments might give the impression to the hurried practitioner that there is no real risk of injury below doses of 150 to 250 r, as it took exposures of this magnitude or of even greater magnitude to portions of the body to produce an increased incidence of leukemia, an increase which is really not significant as leukemia is rare even if the incidence is increased.

The purpose of the article is to show that even though we cannot observe or accurately predict the extent of injury from radiation, we do know that there is some biological effect from even the smallest amount. Therefore it seems wise to use only as much as we need to use. I do not know whether Dr. Newell is personally demanding discipline of the radiologists. I did not intend that my article imply that this was the next step in radiation protection.

DELL F. DULLUM, M.D.



Digitalis in Open Heart Operations

SOL BERNSTEIN, ***M.D.,*** **JOHN E. MEIHAUS,** ***M.D.,***
OSCAR MAGIDSON, ***M.D.,*** **and JEROME HAROLD KAY,** ***M.D.,*** **Los Angeles**

• In addition to the usually accepted indications for digitalis therapy, we believe there is a group of patients, not having heart failure, who would benefit from digitalis in connection with open operations on the heart. This group includes all adults, all with the tetralogy of Fallot, and all with high pressure ventricular septal defects. Digitalis preparations can be given in the usual digitalizing doses several days before operation to insure the presence of some glycosides at the end of the operation when cardiopulmonary by-pass is discontinued. An additional maintenance dose can be given by the anesthetist at the time of completion of cardiopulmonary by-pass and another dose the evening of operation. If during the immediate postoperative period supraventricular arrhythmia occurs, particularly tachycardia, the ouabain test is extremely useful and safe in determining whether or not more digitalis is needed.

SINCE THE TIME of Withering, cardiac glycosides have been the most important pharmaceutical agents in the management of congestive heart failure. The basis for present-day digitalis therapy is many years of clinical experience and research.[5,11] The major indications for the use of digitalis fall into two categories, namely, congestive heart failure and supraventricular tachycardias.[3,4,6] Prophylactic digitalization in the absence of heart failure has been considered by some observers to be useless, by some harmful.[6,7]

While numerous studies have shown that digitalis may decrease the cardiac output in a normal heart, the results of studies on a diseased but not failing heart have been contradictory. Some investigators have reported demonstrating a fall in cardiac output, while others have observed no effect upon output at all.[6] Whether prophylactic digitalization is useful in patients with heart disease but not in failure has not been conclusively proved; however, opinion now seems to favor the view that a digitalization can be carried out in such circumstances without fear of decreasing cardiac output or producing detrimental effects on blood pressure.

The use of open heart surgical techniques (with extracorporeal circulation) for the correction of many congenital and acquired cardiac defects raises the question of another possible indication for digitalis, namely, that of increasing the efficiency of a nonfailing hypertrophied heart to which surgical trauma has been added.[1,2,9]

The purpose of this communication is to present our experience, impressions and techniques regarding digitalis therapy gained in the use of open heart operation, with extracorporeal circulation of blood through a stationary screen oxygenator,[8] for the treatment of 300 patients with congenital and acquired heart disease.

At the completion of cardiopulmonary by-pass it was noted that in some cases the heart contractions were weak and the blood pressure could not be maintained. In such cases, intravenous administration of rapid-acting cardiac glycosides brought about improved myocardial efficiency, as evidenced by stronger myocardial contraction and an increase and better maintenance of blood pressure. This was particularly evident in the early cases when the heart had been arrested by potassium or anoxic cardioplegia for long periods during the open heart repair. It was noted more frequently with some types of defects than with others. Through close observation of the exposed heart immediately after by-pass, it was found that digitalis was valuable and, in our experience, was indicated for all adults undergoing open heart operations, all patients with tetralogy of Fallot, and all patients with high pressure ventricular septal defects. At times the trauma of right or left ventriculotomy during by-pass, added to hypertrophy of the myocardium, resulted in inefficient contractions unless digitalis was used. Feeling that administration of digitalis the instant circulatory by-pass was ended was beneficial, we came next to the question whether digitalization before operation and the addition of more of the drug at the time by-pass was ended might not be even more helpful. This method was used in the last 200 cases (adults and patients with tetralogy of Fallot and high pressure ventricular septal defects) with gratifying results. Immediate postoperative dilatation and failure did not occur, and the blood pressure as well as cardiac output were within normal range in the immediate postoperative period. One problem did arise, however, with regard to digitalization before and after operation. This was the un-

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answered question of how much digitalis remained in the body after discontinuing pump circulation and therefore how much more digitalis was required during the first few days after operation to insure adequate digitalization. In most cases a daily maintenance dose of digitalis preparation was given intramuscularly shortly after the by-pass was ended, and this was repeated the evening of the operation. In some patients tachycardia or arrhythmia persisted and in these patients it was found useful to perform a ouabain indication test postoperatively. This helped to determine how much additional digitalis preparation was necessary. The acetyl strophanthidin test was not used because we lacked experience with it.

Other investigators have reported, with regard to operations of all kinds on patients previously taking digitalis, the need for additional digitalis after operation. This applies to general abdominal surgical procedures as well as to cardiac and thoracic operations[5,11] such as mitral commissurotomy and hypothermic repair of atrial septal defects.

The use of cardiopulmonary by-pass poses a unique problem. Since there is a constant mixing of the patient's blood with large volumes of donor blood, it is impossible at present to accurately calculate how much glycoside remains in the tissues and how much is "washed out" during operation. Some glycosides, notably digitoxin, have a strong affinity for serum protein; however, how much remains in the tissues as well as in the serum after by-pass is unknown, and we know of no studies to determine this. The ouabain test, as carried out in the present series of cases, consists of the dilution of 1 ampule of ouabain (0.5 mg.) in 20 cc. of 5 per cent glucose and water. This is given slowly at the rate of 1 cc. per minute intravenously with constant electrocardiographic monitoring. The injection is stopped at the first sign of digitalis intoxication, as manifested by the appearance of ventricular ectopic beats, decrease in blood pressure, nausea or bizarre arrhythmia. In ten patients a persistent nodal tachycardia or atrial flutter during the first postoperative week necessitated complete redigitalization as suggested by the ouabain test. In one patient who had open heart repair of calcific aortic stenosis, atrial flutter developed 30 hours after operation. He was completely redigitalized, using digitoxin, and then 0.3 mg. of digitoxin was given daily for several days, but the arrhythmia persisted. The ouabain test on the seventh postoperative day revealed that 0.5 mg. of ouabain was necessary to convert the flutter from a 2:1 ventricular response with a ventricular rate of 150 to a 4:1 response and a ventricular rate of 75. The patient was redigitalized for a second time and the flutter was finally converted to atrial fibrillation. With large daily maintenance doses of gitaligin (1.0 mg. three times a day) for an additional three days, the fibrillation reverted to sinus rhythm. Another patient was operated upon for a ruptured sinus of Valsalva aneurysm, with a large communication from the aorta into the right ventricle. At the time of operation a congenital ventricular septal defect and pulmonary stenosis were also repaired. During the immediate postoperative period the condition of the patient was satisfactory except for the development of nodal tachycardia with resultant drop in blood pressure, and the appearance of prominent "A" waves in the jugular pulse. The ouabain test revealed the necessity for complete redigitalization, which was accomplished with digitoxin. The rhythm was converted to sinus and the patient made an uneventful and complete recovery.

1200 North State Street, Box 486, Los Angeles 33 (Kay).

ADDENDUM

After this paper was written, the work of Cooper and coworkers[2] came to our attention. Their experimental data would confirm our clinical impression of the usefulness of digitalis in open heart operations.

REFERENCES

1. Beuren, A., Sparks, C., and Bing, R.: Metabolic studies on the arrested and fibrillating perfused heart, Amer. J. Cardiol., 1:103, 1958.

2. Cooper, T., Willman, V. L., Panagiotis, Z., and Hanlon, C. R.: Prophylactic digitalization on myocardial function after elective cardiac arrest, Ann. Surg., 151:17, 1960.

3. Corday, E., Gold, H., de Vera, L., Williams, J., and Fields, J.: Effect of the cardiac arrythmias on the coronary circulation, Ann. Int. Med., 50:535, 1959.

4. Friedman, M.: Digitalis therapy and intoxication, Modern Concepts in Cardiovascular Dis., 25:311, 1956.

5. Gilchrist, A.: The rational use of digitalis, Edinburgh Med. J., 46:233, 1939.

6. Goodman and Gilman, second edition, 1955.

7. Hoesley, J., and Luan, L.: Digitalis in congestive heart failure, Med. Clinics of N. Amer., Jan. 1957.

8. Kay, J. H., and Anderson, R. M.: The development of open heart surgery, Univ. So. Calif. Med. Bull., 10:1, 1957.

9. La Due, J. S., and Fahr, G.: The effect of the intravenous administration of Lanatoside C upon output, diastolic volume and mechanical efficiency of the failing human heart, Am. Heart J., 25:344, 1943.

10. Lombardo, T. A., Radigan, L. R., and Morrow, A. G.: Myocardial failure in experimental hypothermia, Circulation Res., 5:22, 1957.

11. Lown, B., and Levine, S.: Current Concepts in Digitalis Therapy, Little, Brown and Co., Boston, 1954.

Syphilis and Serologic Evaluation of Patients

A Recurring Problem

R. C. DICKENMAN, *M.D.*, and R. J. KLEINHENZ, *M.D.*, San Francisco

• Although syphilis is again becoming more prevalent, routine serologic testing for the disease is diminishing. A test such as the VDRL or similar test is useful for general screening. If the test is nonreactive, the probability of the patient having syphilis is minimal. If the screening test is positive, a positive reaction to a Reiter or TPI test indicates a high probability of syphilis. But a negative reaction to these tests is not full assurance of absence of disease.

THE NUMBER OF PERSONS with syphilis has been rising steadily in the United States since 1956. A recent editorial in the *New England Journal of Medicine*[9] pointed out that within the last two years infectious primary and secondary syphilis has risen 87 per cent, that approximately 60,000 new cases of syphilis are reported each year in this country and that currently about 1,200,000 persons have syphilis and need treatment.

In California[2,3] 570 new cases of primary and secondary syphilis were reported in 1958; in 1959 there were 935 new cases and in 1960 approximately 1500. More than 280 deaths in which syphilis was a cause were reported in California in 1959. The present rate of syphilis in California is at its highest since 1949. In San Francisco there were 885 cases of syphilis (all stages) reported in 1959, and the number was even greater in 1960. Among communicable diseases, only measles, mumps, streptococcus infections and gonorrhea are more common in California.

In recent years, syphilis has come to be regarded as a minor disease problem to which little thought and care need be given because it has been largely eliminated. The requirement of a routine serologic test for syphilis of all patients at the time of admission to hospital has been eliminated. Many clinicians have stopped even selective serologic testing for syphilis on their patients. Reasons frequently given for not routinely examining for syphilis infection are that the disease is most common in young persons and is not common in the white population. However, data for San Francisco indicate that three-fourths of the primary new cases are in white patients. As to the age of patients, in San Francisco in 1959 there were no cases of primary syphilis reported in patients under 20 years of age, 24 cases in the 20 to 24 age bracket, 111 cases in persons from 25 to 34 years old, 35 cases in the 35 to 44 age group and two cases in persons of 45 and over.

In the last 11 years, many new tests have been developed using virulent *Treponema pallidum*, their variants, extracts or portions as the antigen. Many pathologists, clinicians and nonmedical laboratory workers regard the *Treponema pallidum* Immobilization Test (TPI) and its related tests as the ultimate for diagnosis of syphilis. Some have even advocated that no diagnosis of syphilis be made unless the TPI or similar test is performed. However, the very number of *Treponema pallidum* tests and their variations that have developed in the past 11 years indicates that the tests must not be as perfect as many believe.[6] These new tests include over 13 with *Treponema pallidum* as the antigen, seven or more with Reiter Treponemal antigen, and many more non-Treponemal antigen tests. Among these tests are:

1. *Treponema pallidum* Immobilization Test
2. *Treponema pallidum* Methylene Blue Test
3. *Treponema* Agglutination Test
4. *Treponema pallidum* Immune Adherence
5. Full-Bodied *Treponema pallidum* Complement Fixation Test
6. Fluorescent Treponemal Antibody Test
7. *Treponema pallidum* Complement Fixation
8. Treponemal Wassermann Reaction
9. *Treponemal pallidum* Cryolysis Protein Reaction
10. Reiter Protein Complement Fixation
11. Kolmer Test with Reiter Protein Antigen.

The terms *specificity* and *sensitivity* are used for evaluating serologic tests. *Sensitivity* refers to the percentage of reactive and weakly reactive results obtained with sera from known syphilitic donors, while *specificity* refers to the percentage of negative or nonreactive results obtained from sera of nonsyphilitic donors.

The *Serology Evaluation Research Assembly Study* (SERA)[10] showed that the sensitivity of the TPI and related treponemal tests varied from 65.48 per

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Department of Pathology, Presbyterian Medical Center, San Francisco 15.

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cent to 91.63 per cent, while the specificity of the same tests varied from 80.98 per cent to 97.30 per cent. An analysis of these data points out the fallacy of arbitrarily accepting the TPI as having absolute sensitivity and specificity. In the same studies the tests employing the Reiter antigen showed a sensitivity which varied from 72.29 per cent to 95.06 per cent, while the specificity varied from 86.29 per cent to 97.77 per cent. Magath,[6] in summarizing his views on the SERA Report, said, "If there is one over-all conclusion that may be drawn from the work of the Assembly, it is that the best treponemal antigen tests are no better than the best standard serologic tests, taken as a group." If the treponemal test is positive, it indicates a high probability that the patient does have or has had syphilis; but if it is negative, it will neither confirm nor deny the results of the Serologic Tests for Syphilis (STS).[1,5,7] Similarly, if the STS is negative or nonreactive and the treponemal test is positive, this fact alone does not establish an absolute diagnosis of syphilis. The results of the Reiter tests should be interpreted in a similar manner.[4,5,7]

During recent months we have evaluated a selected group of patients using the Reiter, Kolmer, VDRL and Hinton tests. Fifteen of these patients had definite evidence of syphilis other than from serologic tests. The majority of this group were in tertiary stages, and many had been adequately treated. Results of the tests were as follows: the Reiter test was reactive in seven cases, the Kolmer in five cases, the VDRL in 13 cases, and the Hinton in all 15 cases. These results emphasize the usefulness of tests such as the VDRL and Hinton for general screening and also point out that both the Reiter and Kolmer may be negative or may become negative in patients who have had syphilis.

The study also included another four patients who on the basis of age, past history, physical examination and clinical evaluation were believed to be "false positive" reactors. Results of their tests were as follows: the Reiter was negative in all four cases, the Kolmer was reactive in three, the VDRL was reactive in three and the Hinton in two. One of the four patients had known collagen disease, another showed a nonreactive TPI, and in the other two patients there was no apparent reason to account for the results obtained with other tests.

This study, although small, again emphasizes the usefulness of the Reiter test. When this test is reactive, the probability that the patient has or has had syphilis is high; and when it is negative, it is of no absolute diagnostic significance.

Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15 (Dickenman).

REFERENCES

1. Berner, J. J., King, J. W., and Reich, A.: Evaluation of the Reiter Protein Complement-Fixation (RPCF), Cleveland Quart. Clin., 27:162-173, July 1960.

2. California Morbidity Report, State Department of Public Health, Bureau of Acute Communicable Diseases, Berkeley, December 2, 1960.

3. California Public Health Statistical Report 1959, Part III, Communicable Diseases, State of California Department of Public Health, Berkeley, 32 pp.

4. Carpenter, C. M., Miller, J. N., and Boak, R. A.: A "triple-test plan" for the serologic diagnosis of syphilis—A modern day approach, N.E.J.M., 263:1016-1018, Nov. 17, 1960.

5. Hepler, O. E., and Butler, T. J.: The Detection of Biological False Reactors in Serologic Tests for Syphilis, Using the Reiter Protein Complement-Fixation (RPCF) Test. Abstracted in Program for the Annual Meeting of the American Society of Clinical Pathologists, College of American Pathologists and the Inter-Society Cytology Council, Sept. 23-Oct. 2, 1960, p. 57.

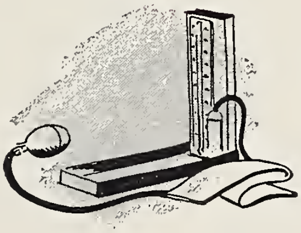
6. Magath, T. B.: The serologic problem of syphilis, even today, Amer. J. Clin. Path., 34:338-345, Oct. 1960.

7. Peterson, E. T., De Haven, R. C., Wright, E. T., and Miller, J. N.: The Reiter Protein Complement-Fixation (RPCF) test, Amer. J. Clin. Path., 34:231-236, Sept. 1960.

8. San Francisco Department of Public Health: Personal communication to the author.

9. Syphilis and the triple-test plan, Editorial in N.E.J.M., 263:1031-1032, Nov. 17, 1960.

10. Serology Evaluation and Research Assembly 1956-57, Public Health Service Publication No. 650, Atlanta, U. S. Dept. of Public Health, Educ. & Wel., 1957, 214 pp.



Pectus Deformities

ROSS N. GIEM, *M.D.*, GEORGE A. PAULSEN, *M.D.*, and JACK DYKES, *M.D.*, Bakersfield

• The surgical correction of a deformity of the anterior chest wall is becoming more frequent as knowledge regarding causes increases and as better results are achieved.

The present etiological concept of an excessive costal cartilage growth has prompted surgeons to perform total excision of the involved costal cartilages. The operation used in 27 patients included in the present study incorporated this principle and, in addition, the use of a temporary pin support until the flaccid chest wall becomes firm enough to resist a flail motion.

PECTUS DEFORMITIES are developmental asymmetries of the chondrosternal area in which the sternal plate is either depressed or elevated. Pectus excavatum (funnel chest) and pectus carinatum (pigeon breast) are the two main types (Figure 1) but sometimes the features of both occur in one person. Defects of the thoracic wall, such as bifid sternum and traumatic deformities, are not within the scope of this report.

Terms such as *trichterbrust*, *chonechondrosternon*, *pectus recurvatum*, *thorax en entonnoir* and *koilosternia* have been coined for depression defects, and *pectus gallinatum* for pigeon breast.

Pectus excavatum is characterized by a broad funnel-like depression of the lower anterior thorax, including the sternum and costal cartilages. The anterior-posterior diameter of the chest is shortened. The posterior deflection of the sternum usually begins near the third chondrosternal junction and is deepest at about the level of the tenth thoracic vertebra. The patient characteristically has kyphosis, stoop-shoulders, a "pot-belly" and other musculoskeletal irregularities (Figure 2).

In *pectus carinatum* the sternum is deflected anteriorly, forming a ridge, the xiphoid process being most prominent. A narrowing of the lower chest cage exists in the carinatum deformity (Figure 3).

History

Medical records of Johann Bauhinus[1] in 1594 contain the first clinical description of a patient with this problem, with the suggestion that a foreshortened diaphragm caused the sternal depression. For more than three hundred years, exercises and braces were the only therapeutic procedures known or employed.

The era of surgery was opened by Meyer's procedure[13] (1911) in which he excised the second and third costal cartilages on the right side, bringing about slight lessening of the deformity. Two years later Sauerbruch[17] excised the left fifth to tenth costal cartilages with adjacent one-fourth of the sternum, thereby providing fair relief of deformity and symptoms. Up to World War II only 27 patients had been operated upon. Six of them—all more than 16 years of age—died. In only half of the cases was the result of the operation a success. The procedures used in the 27 cases consisted of one or more of the following: Division, wedging or excision of costal cartilages, and "T" sternotomy, transverse osteotomy, sternectomy or inversion of sternum. In none of the procedures were traction devices, transfixion devices or internal splinting used for fixation.

In 1939, Brown[2] presented his surgical approach based on the "substernal ligament" hypothesis, in which he merely transected this ligament and removed the xiphoid process. This procedure is no longer recommended. The main objections are that it does not fully restore normal contour, the technical risk is great and there is likelihood of a recurrence of the deformity.[2,9,11,15]

Improved techniques for anesthesia have encouraged a more radical and extensive correction of

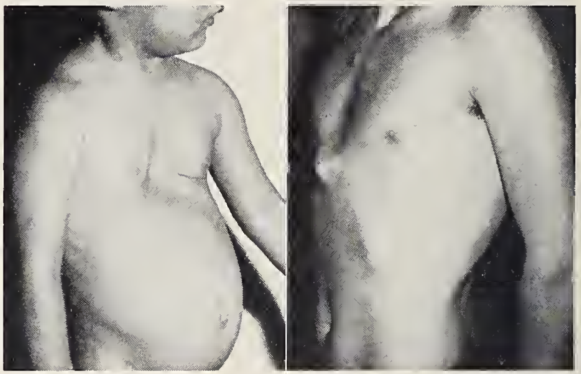


Figure 1.—The characteristic sternal depression of pectus excavatum (left) with stoop shoulders and pot belly. There is also an anteroposterior foreshortening of the thoracic cage. Pectus carinatum deformity (right) usually has some degree of lateral narrowing of the thoracic cage beside the sternal protrusion with adjacent wall depression.

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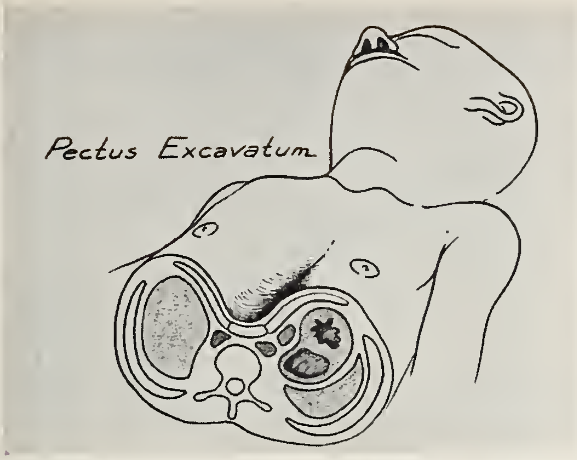

Figure 2.—The severe excavatum depression produces a marked shift of mediastinal structures to the left causing cardiac displacement and reduction of pulmonary function.

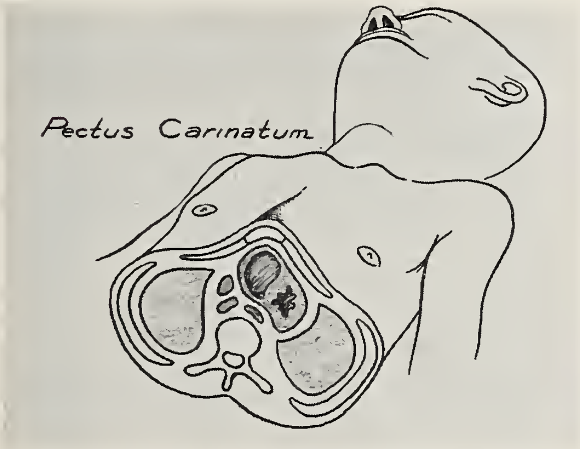

Figure 3.—Fixation of the deformed rib cage reduces the vital capacity even though organs may not be displaced noticeably.

pectus deformities and in more and more cases successful reconstruction is being achieved. At the same time, the mortality rate has been reduced to that of thoracotomy.

Incidence

Six of 10.000 babies born have pectus deformities. The incidence is four times as high in males as in females. The proportion of excavatum to carinatum anomalies is also four to one. The familial occurrence is noteworthy: One observer reported 11 members in four generations of one family had the deformity, eight in another and seven in three generations of a third family have been reported.[14] In one instance twins were involved, one having a pectus excavatum and the other carinatum pectus. The trait is believed recessive, but in some circumstances it appears to be dominant.[16]

Etiology

Many theories as to causes for the deformity have been proposed. The four most significant hypotheses are:

1. That there is a shortened anterior-posterior fibromuscular structure behind the xiphoid process —perhaps the diaphragm or the central tendon or the anterior diaphragm muscle or the substernal ligament.[2,8] However, in deformity of the excavatum type. the greatest depression of the sternum is usually located at or above the level of the tenth thoracic vertebra, which is above the origin of the diaphragmatic muscle. Also the sternum may be depressed into the thoracic paravertebral gutter, a site not related to substernal ligamentous attachments.

2. That there is an imbalance in the pectoral muscular innervation and function, with pigeon breast occurring when there are spastic or overstimulated muscles. and funnel chest where weak muscles permit the stronger diaphragm to "overpower" the pectoral groups.[8]

3. That there is abnormal attachment of the pectoral muscles in such a way as to affect the balance of muscle pull against the diaphragm. It is thought an insertion of the pectoral muscle at the sternum causes sternal protrusion and a lateral insertion causes sternal depression.[8]

4. That an overgrowth of the costal cartilages (or ribs) causes buckling in or out of the cartilages and sternal plate.[7,10] The incidence of pectus deformities in Marfan's syndrome in which overgrowth of the long bones is a cardinal defect, tends to support this theory. We consider it the most plausible with regard to pectus deformities.

Less commonly ascribed as causes are intrauterine pressure of chin, elbow or knee. In cobblers, constant pressure of the shoe-last against the chest is thought to be a cause.

Anatomical dissections and surgical evidence do not constantly support the hypotheses in Paragraphs 2 and 3 above. There is no proven cause.

Associated Anomalies

As is true with most developmental anomalies. pectus deformities are very frequently accompanied by other congenital defects. Of 25 patients observed by us, 12 had associated musculoskeletal or neurological problems. Some observers[15,16] have reported associated anomalies in 30 per cent of cases.

Clinical Observations

The disturbances of function of cardiovascular, respiratory and digestive systems are difficult to measure, for the patient usually adapts to the deformity. Organs adjacent to the sternum are mobile and flexible. There is wide variation in the degree

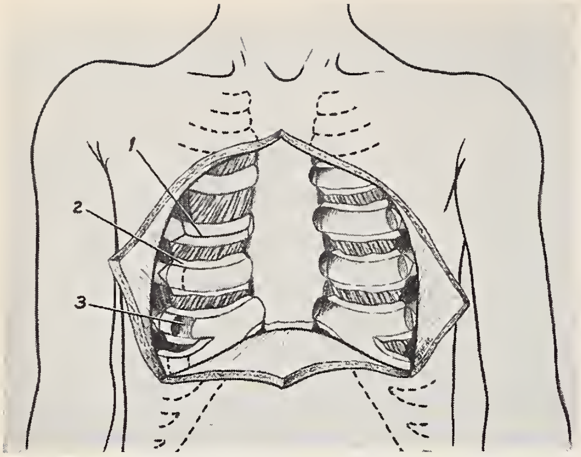

Figure 4.—Composite view of operative field with reflected flaps of inverted "Y" incision. (1) Perichondrium incision, (2) reflected, (3) segment excised. The left side of thoracic wall demonstrates the reflected perichondrium of the excised cartilages.

of deformity. In most cases the asymmetry is slight, in a few moderate. Extreme deformity is rare.

Cardiovascular problems are associated with great displacement of the sternum. The symptoms consist of dyspnea, palpitation, precordial pain, easy fatigue and fainting spells. Sometimes congestive failure occurs. Displacement of the heart to the left depresses the inflow and outflow volumes by compression or torsion on the great vessels.

Electrocardiographic and vectorcardiographic changes have been noted.[19,20] Arrhythmia, ventricular tachycardia, P-wave changes, elevation of ST segment and T wave inversion have been demonstrated.[4,5,20]

Exertional dyspnea is a common concomitant, and also, in extreme deformity, shortness of breath. There is a tendency to frequent recurrence and greater severity of infectious diseases of the respiratory tract because of a diminished ability to cough effectively. About a third of the patients we observed spoke of this tendency.

The respiratory excursions of the diaphragm are decidedly impaired and the expansion of the rib interspaces is decreased. Vital capacity is diminished.[8]

Parents are distressed by the deformity in infancy but the child, barring another anomaly incompatible with life, grows at normal rate. His distress begins as he becomes a physical curiosity to his playmates and it often increases as he approaches adolescence. Often as a teen-ager he shies away from locker rooms and from sports in which the torso is exposed.

Surgical Treatment

Minor deformities can be left untreated, for pectoral muscle development alone may suffice. If the deformity is great enough to consider braces, belts or appliances, surgical correction also should be considered.

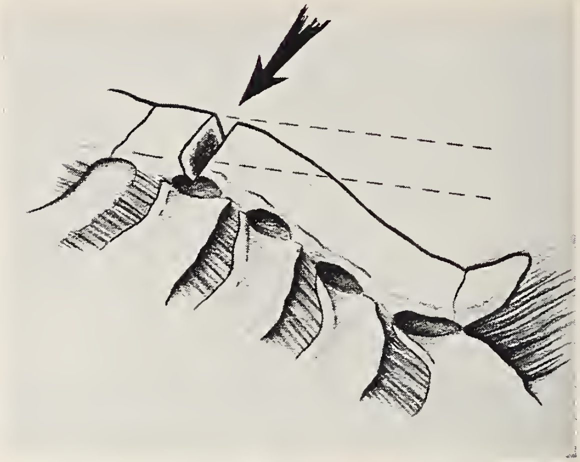

Figure 5.—Cartilages are removed and transverse osteotomy is made permitting straightening of sternum.

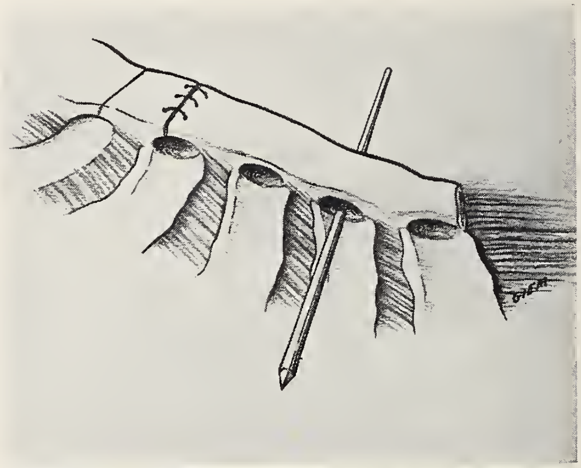

Figure 6.—Sternum is separated from mediastinum and edges of osteotomy are approximated. The Steinmann pin is inserted.

Some observers advocate "limited" sternoplastic correction in infancy. This procedure had been done previously on one of the patients we treated, and reoperation was required. The optimum age for operation is 3 to 5 years, the results being better both surgically and psychologically.

Surgical Technique

An inverted Y incision is made, with the bifurcation of the incision beginning slightly above the xiphisternal junction. The lateral extent is determined by the deformity. In female patients the lower lateral incisions are contoured to follow the existing or predicted inframammary folds. Keloid formation over the sternum has not been a problem.

The pectoral muscles are elevated with the skin flaps. The perichondrium of each costal cartilage is incised and stripped free, exposing the cartilage. The cartilage is removed completely, leaving an intact perichondrium. The xiphoid bone is excised by sharp dissection and a wedge transverse osteotomy is made at the upper end of the sternum where the deformity begins. Blunt finger dissection beneath the sternum releases posterior sternal attachments (Figures 4, 5 and 6).

Reconstruction is achieved by reapproximating the rectus muscles to the lowest perichondrial strip. The osteotomy edges are approximated. A Steinmann pin is inserted transversely between the sternal bone plates with each end passing outward through the lateral muscle and skin flaps. This pin provides stability during the fixation phase of healing. The substernal space is drained by a catheter attached to suction.

Usually there are no operative complications. Unilateral pneumothorax, which occurred in three cases, was satisfactorily managed by catheter suction for 24 hours.

Ambulation is begun on the first postoperative day. The pin is removed as soon as the wall of the chest is firm enough to resist a flail motion—usually 10 to 15 days after operation—and exercise to tolerance is allowed by three weeks.

Kern County General Hospital, 1830 Flower Street, Bakersfield (Paulsen).

REFERENCES

1. Bauhinus, Johann, op. cit. Ochsner, A., and De Bakey, M. E.[14]

2. Brown, A. L.: Pectus excavatum anatomic basis: Surgical treatment of incipient stage in infancy; and correlation of deformity in fully developed stage, J. Thor. Surg., 9:164, 1939.

3. Brown, A. L., and Cook, O.: Cardiorespiratory studies in pre- and postoperative funnel chest, Dis. Chest, 20:378, 1951.

4. Dorner, R. A., Keil, P. G., and Schissel, D. J.: Pectus excavatum: A case report with pre- and postoperative angiocardiographic studies, J. Thor. Surg., 20:444, 1950.

5. Dressler, W., and Roesler, H.: Electrocardiographic changes in funnel chest, Am. Heart J., 40:877, 1950.

6. Ebstein, op. cit. Ochsner, A., and De Bakey, M. E.[14]

7. Flesch, M., op. cit. Ochsner, A., and De Bakey, M. E.[14]

8. Jackson, J. L., George, R. E., Hewlett, T. H., and Bowers, W. F.: Pectus excavatum, Am. J. Surg., 98:664, 1959.

9. Lester, C. W.: Deformities of the thorax of congenital or developmental origin, J. Thor. Surg., 19:507, 1950.

10. Lester, C. W.: The etiology and pathogenesis of funnel chest, pigeon breast and related deformities of the anterior chest wall, J. Thor. Surg., 34:1, 1957.

11. Lindskog, G. E., and Felton, W. L.: II, Considerations in the surgical treatment of pectus excavatum, Ann. Surg., 142:654, 1955.

12. Master, A. M., and Stone, J.: The heart in funnel shaped and flat chests, Am. J. M. Sc., 217:392, 1949.

13. Meyer, op. cit. Ochsner, A., and De Bakey, M. E.[14]

14. Ochsner, A., and De Bakey, M. E.: Chonechondrosternon: Report of a case and review of the literature, J. Thor. Surg., 8:469-511, 1939.

15. Rydell, J. R., and Jennings, W. K.: The surgical treatment of funnel chest deformity, Am. J. Surg., 88:69, 1954.

16. Sainbury, H. S. K.: Congenital and funnel chest, Lancet, 253:615, 1947.

17. Sauerbruch, F., op. cit. Ochsner, A., and De Bakey.[14]

18. Schenck, op. cit. Ochsner, A., and De Bakey, M. E.[14]

19. Sweet, R. H.: Pectus excavatum, Ann. Surg., 119:922, 1944.

20. Teplick, J. G., and Drake, E. H.: The roentgen and cardiac manifestations of funnel chest, Am. J. Roentgenol., 56:721, 1946.

21. Woillez, op. cit. Ochsner, A., and De Bakey, M. E.[14]

Rehabilitation After Stroke

Emphasis on Usefulness in Restoration of Function

S. MALVERN DORINSON, *M.D.*, San Francisco

• The physical treatment of patients with paralysis after stroke is not a casual prescription of exercise but involves an evaluation of the patient from the mental and sensorimotor standpoint to determine his disabilities and abilities. This is necessary to prescribe and direct a precise form of activity and functional exercises that will promote a return of functional patterns of movement useful to the patient for his independence.

UNTIL FIFTEEN YEARS AGO the treatment of patients with stroke was considered to be mainly a nursing problem and one that did not require much planning, supervision or active management by the physician. Patients who could make some spontaneous recovery would get out of bed, walk in whatever way they could and perhaps even learn to care for themselves. What treatment there was, was watchful and prayerful waiting and pleasant surprise if the patient did show enough recovery to do anything.

Now we have come to a quite different medical attitude: "Get 'em up and going," or, more formally, early mobilization. The sequelae of immobilization of healthy persons has been shown to be (1) nitrogen loss, with consequent loss of muscle tissue, (2) atrophy, as shown by smaller size of extremities, (3) calcium loss, leading to osteoporosis and renal stones, (4) phosphorus loss, (5) stiffness and soreness of joints, (6) deterioration of standing reflexes, (7) impairment of circulation, (8) decrease in blood volume, (9) increased generalized weakness, (10) profound psychological changes.

Thus the disability resulting from immobilization following stroke can be greater than that caused by damage to the brain. All too often the effects of immobilization complicate the neuromuscular disabilities and minimize the chances of functional recovery.

Early mobilization is simple, is physiologically sound and requires no expensive apparatus. If necessary, it can be carried on at the patient's home and by members of his own family if they are properly instructed.

In the acute stage, the nursing care consists of nutrition, bowel and bladder care, skin care, and proper bed positioning and body alignment.

Besides food, adequate intake of fluids is necessary. Inasmuch as many of the patients cannot request fluids and do not help themselves, this is often neglected, fluids being given only at mealtime and in small amounts. Patients should be encouraged to feed themselves as soon as possible. Beginning the day they are strong enough to sit up and eat, they should raise food to their mouths, using the hand not affected by the stroke if necessary to obviate being fed.

In many patients "incontinence" is due to inability to request the urinal or the bed pan rather than to neurogenic impairment of sphincter control. Far too often in such circumstances a catheter is inserted for the convenience of the nurses to keep the bed dry. Keeping the bed clean may prevent difficulties with the skin, but catheterization creates other problems which in the end may be much more severe. Not only is there a likelihood of bladder infection, but with a retention catheter long in place the patient loses all bladder sensation, even of duty to be clean, and dispensing with it later becomes difficult. Bowel training also can be started even if the patient cannot speak his need. The use of glycerin suppositories, mild laxatives and a regular evacuation time can accomplish bowel training in many of the most mentally dull patients.

Although avoiding decubitus ulcers depends largely on keeping the bed dry and changing the position of patients frequently, often they are left to lie in one position for the convenience of the nursing staff. They should be turned on either side from time to time; and, ideally, should even lie prone occasionally, although this is a difficult position for most elderly people.

The proper bed positioning and body alignment involves the use of a foot board or a right-angle dorsiflexion splint or cast to prevent foot drop and tightening of the heel cords as well as to stimulate extensor muscle responses by plantar pressure. If such a splint or cast is used, the extremity must be removed several times a day in order to avoid ulceration on the heel. External rotation of the leg should be prevented also. The upper extremity may be supported by the use of pillows, with the ideal

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Submitted July 9, 1960.

position of abduction at 90°, neutral rotation, elbow extended to 150° and hand and fingers supported in neutral or slight extension. A cock-up splint may be put on the hand or wrist but it must be removed at least twice daily in order to prevent deformities conforming to the splint. The use of an overhead orthopedic frame with trapeze is useful to encourage the patient to use his remaining arm and leg to move himself about the bed.

DISTURBANCES OF FUNCTIONS

As with the medical treatment of most diseases, the physical rehabilitation of the stroke patient is the treatment of symptoms. This is not a matter of dealing with a muscle paralysis as in poliomyelitis, but with a form of brain damage which often involves sensation and mental processes as well as motor handicaps. Thus, hemiplegic patients not only have neuromusculoskeletal problems but also disturbances in mental function that may involve their behavior, their language formulation or their reasoning powers. The amount of mental damage may be the major factor in determining functional recovery, irrespective of the motor damage.

Disturbance of mental function may be evident in many ways if it is searched for. There may be disorientation, memory impairment, emotional lability, short attention span, dementia, and denial of the presence of the involved limbs. There may be also various agnosias and apraxias. Aphasia may be complete, the patient neither understanding words nor being able to say them. Or it may be any of a number of variants; for example, the patient may understand speech but be unable to formulate words. There also may be forms of agnosia in which the patient does not recognize objects by their feel. He may also have apraxia in which he does not recognize what to do with objects.

Frequently there is a disturbance of sensation on the involved side. This may be expressed as a diminution of touch and pain. This is much more frequently found in left-sided hemiplegia. A more difficult thing to test is loss of proprioception; and it is of considerable importance when it is found. It can manifest itself by gait disturbance or by poor use of the hand when there is sufficient motor power. Visual field deficits, frequently concomitants of stroke, will also influence gait and use of the hands.

The most obvious handicap, of course, is that of disturbance of motor power. This may be present either as monoplegia, hemiplegia or double hemiplegia, depending upon the severity and site of the stroke. The muscle tone itself is altered, causing flaccidity or spasticity or rigidity. Occasionally, dystonic or dyskinetic movements are present.

Before one can begin treatment, an assessment must be made of the patient's abilities and disabilities in all the spheres that have been mentioned. The degree of sensorium loss is important in knowing how cooperative the patient is and will be and, thus, in determining what specific rehabilitation program might be followed. The fact that a patient is still disoriented does not necessitate deferring all treatment but it does mean planning an entirely different approach. This involves an explanation both to his family and to the nurses and therapists attending him. Again, the approach to this problem will vary with an individual patient. Some may need sedation and avoidance of any external stimuli, necessitating that they be in a private room or away from other noisy patients, or away from activity or pressure of any sort. Others, who may be withdrawn, may need the stimulation of much activity going on about them, forcing them into group activities and into the environment again. For example: In one hospital that has an active occupational therapy department, approximately 30 patients are taken to the department daily, only 15 of them participating in activities there, yet the others are more alert and more cooperative in their nursing routines afterward, for they enjoy the experience even if it is only watching others being busy. It is, of course, important to analyze the degree of mental impairment lest the planned exercise or activities be beyond the frustration point of the patient, which could bring on emotional problems and an antagonism to any form of therapy.

Dealing with speech problems requires much explanation both to the attending nursing staff and to the family. Aphasia usually occurs with involvement of the dominant side of the brain. Like any other form of damage, it varies from mild to severe, and the prognosis varies accordingly. Speech therapy in aphasia problems due to strokes caused by vascular disease is still of limited value, at least with the usual methods of speech training. As a general rule, patients who have an adequate sensorium and have not shown any spontaneous recovery within a six-week period have a dismal prognosis in this regard. One must understand that aphasia is only one aspect of the problem of language formulation, which also involves reading and writing. As these various factors may be affected in different degrees, they should be tested individually.

The disturbance of sensation on the involved side is something which has been too little appreciated in the past. This is particularly true in so-called mild strokes, in which there may be only a minimal amount of muscle weakness and paralysis and yet the patient has poor functional use of the involved arm or leg. One must understand that this is not merely a matter of diminution of sensation of pain and touch but is more in the disturbance of proprioception, which often mediates the inhibition or facilitation of neuromuscular responses so as to give effective coordination and smooth synergy of movement to a limb. It is only in recent years that this has been given greater emphasis in our exercise program and given us better understanding of the value of certain exercises over others.

PHYSICAL THERAPY

The physical treatment is usually designated as "physical therapy" and it is important to know the "whys and the why nots" of various modalities in this field.

(a) The use of heat is seldom necessary or effective. Heat has only the purpose of improving local circulation or lessening the sensation of pain. Unless the patient does have a painful joint, which usually results from prolonged inactivity, applying heat has no value.

(b) Massage is greatly misunderstood. Massage cannot restore muscle power. It is useful only when local edema is present. It may have some psychological value for the patient or his family but can have no physiological benefit.

(c) Stretching is a form of passive exercises. Muscles that are beginning to become contracted enough to cause deformities of joints undoubtedly will have to undergo periodic stretchings during the day. Sometimes it is necessary to overstretch a muscle because its spasticity is greater than that of its antagonist. For example, the plantar flexor of the leg usually has more spasticity than the dorsiflexors and, likewise, the finger flexors more than the finger extensors. The overstretching is done by putting on splints or bracing.

(d) Electrical stimulation of the muscles has a limited application. It will cause contraction of the muscles stimulated, but as it does so without any sensory input to the body, it has no physiological basis: Electricity makes the muscle respond directly but this does not teach the patient anything nor form any neuronal pathways that might be useful to the patient later on. It is useful in edema of the hands and in preventing fixed contractures.

(e) Exercise is the major form of treatment in stroke cases. However, this covers a broad field and is somewhat like saying that a good diet is the remedy for malnutrition. What is a good diet, and what is appropriate exercise?

Much of the usual exercise treatment of patients with stroke is the application of techniques used in other neuromuscular diseases, mainly poliomyelitis—passive exercise if the patient is too weak to perform any movement, assisted active exercise if he can participate partially in the movement, and active exercise for those who can carry out the full movement against gravity. This may be satisfactory in the treatment of peripheral nerve disease but it is of very little value in the treatment of central nervous system disease with motor involvement. The therapeutic exercise program has been undergoing a transition owing to better knowledge of more basic neurophysiologic features and in recognition of limited success in treating patients with new techniques. The techniques are based upon either a facilitation or an inhibition of the steady bombardment of impulses to the involved muscle groups, plus the use of sensory stimuli for the direction and control of muscle responses. They are still being tried out and refined. In general, they may be summarized as the sensorimotor learning in the training of patients after stroke.

In prescribing physical treatment to be carried out by nursing and therapy personnel, one still has to fall back upon passive exercise to maintain joint range. If joints are not moved, painful contractures may occur, particularly in the shoulder joint. The passive motion is more preventive than therapeutic, for it does not require the patient to do anything. Ideally, such exercise should be carried on by the patient himself, but in the usual circumstances it is not possible, particularly in the first few weeks.

The second simple step is to place the involved limb or segment of the body in a favorable position for activity. For example, the first muscle to return in the lower extremity is usually the adductor and internal rotator. If the hip is placed in the extended position on the bed, as is usual, it is impossible to test for return of strength to this muscle or to encourage its activity. However, if the hip and knee are flexed and the ankle stabilized, then the patient can begin to move his knee laterally and medially to regain these simple movements. Similarly, if the patient is to regain hip extension, the knee and hip should not be acutely flexed but should be put in such a position that it takes a minimal voluntary effort to innervate this muscle.

As far as the arm is concerned, similar positions must be found at which some voluntary innervation can be elicited. For example: The patient might be able to initiate elbow flexion only if the arm is placed in internal rotation and with the elbow extended to 150°. Likewise, elbow extension might best be accomplished with the patient lying on his back with the arm in 90° elevation and the elbow at 90°. Sometimes it is best to pull the elbow into full extension and see if the antigravity impulses will keep the elbow from falling down to hit the patient in the face. One caution is that these maneuvers should not be repeated ad infinitum once the patient is able to do them, lest a fixed pattern be established. It must be recognized that they are only the beginning phases of muscle reeducation and training.

Most patients have some difficulty in holding the trunk in balance. When sitting on the edge of the bed or in a chair they tend to fall, usually to their involved side, as if they have no awareness of overcompensating to their good side. There is an actual loss of the righting reflex in these cases which is not a matter of muscle paralysis of the trunk, and until sitting balance is learned, standing balance and ambulation will be impossible. As a beginning, it is helpful to have the patient fix his eyes on one object or to lean on his involved side but never to pull with his hand to his good side.

Getting the patient out of bed early, sometimes within three days after stroke occurs, is a good means of restoring early balance if the patient is not too fatigued or otherwise in medical straits. Early standing, if it involves bearing weight on the involved extremity, is an excellent means of restoring strength to the extensor muscles of the trunk and legs. However, it is necessary that weight be borne upon the involved extremity and not upon the remaining good extremity if the greatest value is to be obtained. There must be a sensory input stimulation through the sole of the foot and various joints of the extremity in order to stimulate contraction in the extensor muscles, which are necessary for standing. The use of a tilt-table, knee splints and other leg and hip splints is valuable in starting this early training. It is true that there is some disadvantage to restoring too much power to the calf group or the plantar flexors of the foot, but this can be taken care of by means of bracing or surgical operation, provided the patient has enough tone in his knee and hip extensors to maintain the body erect.

AMBULATION AND EXERCISE

Early ambulation is also desirable. Ideally, for ambulation the patient should have good sitting balance and some standing balance and whatever stabilization is necessary for the foot or knee. Approximately 50 per cent of patients require short leg braces to get proper stability of the foot in order to carry out standing in the early stages. Some require these braces permanently unless other means are used to stabilize or balance the foot.

Besides putting the patient in a standing and walking position, a program of gymnasium exercises should be carried out if at all feasible, considering the age and debility of the patient. Exercises may include rolling on a mat, balancing on forearms and knees and balancing on hands and knees if at all possible. For the latter position an elbow extension splint on the involved extremity may be necessary. Kneeling balance and shifting of weight during kneeling is also valuable for teaching accommodation to weight shifting. These exercises are functional exercises and not for individual muscles or joints. To do them, many muscles must contract and patterns of movement must occur. They must be repeated over a long period but they are far superior to any program of so-called bed or table exercises. Since the ability to stand and to walk in some fashion depends simply on an ability to hold the leg rigid, ambulation is a fairly easy goal.

The recovery of hand function is much more difficult and the prognosis much less favorable. In many medical centers that deal with rehabilitation after stroke, very little attention—except for measures to prevent contracture—is paid to restoration of hand function. Instead, stress is laid upon retraining the patient to use the remaining hand for all activities, the effect of which is to teach him to be a one-handed person. The reason for this emphasis on the unaffected hand is that "hand function" involves not only the hand but the entire upper extremity—the scapula, glenohumeral joint, elbow joint, forearm, wrist, fingers and thumb. Any coordinated movement involving reach, grasp, release and pinch, calls for interaction of all the muscles of these structures and the restoration of all of them is not very likely. The crude, uninhibited pattern of movement which returns is one of a synergy of antigravity movements involving adduction and internal rotation of the shoulder, flexion of the elbow, pronation of the forearm and flexion of the fingers and thumb. Improvement of some of the muscles but not all of them does little good, since the distal and proximal muscles may never be restored enough to concert with the others in a smooth function. For example, a patient may be able to elevate his shoulder by rotating the scapula and fixing the glenohumeral joint, yet be able to do little with the arm. Or he may be able to accomplish simultaneous flexion of the fingers and elbow yet be unable to release whatever he grasps.

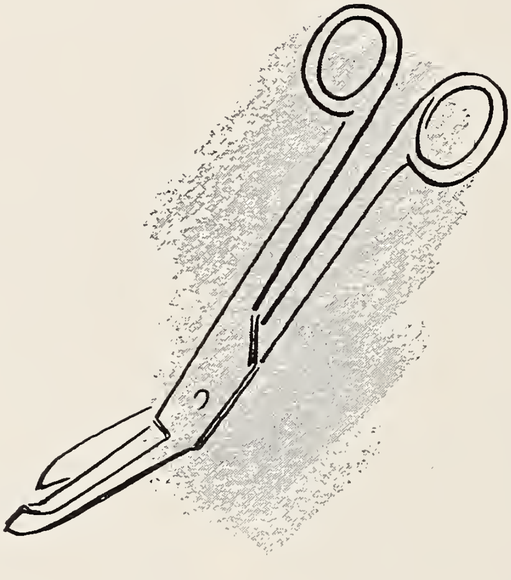
The retraining of the patient to use his remaining hand to accomplish all tasks, including all the fine skills, such as buttoning, eating, writing, dressing and toilet care, is usually assigned to the realm of occupational therapy.

A very valuable gauge for use in occupational therapy is the ability of the patient to carry through some repetitive task. This is a form of test of the mental damage, for some patients can carry on a fairly lucid conversation and show a total inability to carry through any sort of craft activity that is of a repetitive nature. They show little ability to learn anything of a craft nature, which indicates a basic damage to the learning processes. This is very significant in evaluation of the patient and in determining what kind of treatment he should have.

The appliances used for rehabilitation after stroke are attachments for the leg or hand. Sometimes in the early stages a knee splint is necessary to give stabilization to the joint. Usually it can soon be discarded. Usually needed and for longer periods is a short leg brace to stabilize the ankle and thus prevent the plantar flexion-inversion pattern. Several kinds are available for dealing with various degrees of spasticity. Some patients would rather drag their foot than wear an attachment. Hand splints are seldom useful, except sometimes to prevent contracture of various muscle groups. They are of practically no functional value.

Recently there has been reviving interest in orthopedic surgical operations to help restore some of the function in the leg or the hand. These procedures are directed in the main to the motor components of the sensorimotor arc of neuromuscular action—the lengthening of tendons or total tenotomy or interruption of motor nerve supply. It would be far better if it were possible to lessen directly the number of sensory impulses which, remaining uninhibited, cause overactive motor response. However, there is no surgical means for doing this and the motor approach is the only one available. In some cases of plantar flexion-inversion, balance of the foot may be promoted by tenotomy or lengthening of the heel cord, by sectioning of the posterior tibial tendon or by transplantation of the posterior tibial tendon anteriorly. Similarly in the hand, tenotomy or lengthening of the flexor tendons may weaken them enough to bring them into balance with the extensor tendons. Experience in dealing with hemiplegia is prerequisite to selection of patients for orthopedic operation.

Mt. Zion Hospital, 1600 Divisadero Street, San Francisco 15.



CASE REPORTS

Mesothelial Cyst of the Parietal Peritoneum, With Related Symptoms

LOUIS LESKO, M.D.,
WILLIAM H. KERN, M.D., and
GORDON K. SMITH, M.D., Los Angeles

SMALL CYSTS of the peritoneum are commonly observed incidentally at operation and at autopsy. Because they are generally of no clinical importance, few studies have been made of them. Most of the reports point out that the cysts are usually found in the visceral peritoneum, particularly in the pelvic area in women with a history of pelvic inflammatory diseases, and that they are mesothelial, wolffian, epithelial or lymphatic in origin. [2,9,14] Several cases of asymptomatic free cysts within the peritoneal space have been recorded.[1,4,13] These lesions were identical in appearance to the cysts in situ, and the pathogenesis was assumed to be the same. Rarely, multiple small cysts cause clinical symptoms[6,7,14] or complications[5] and in one case a carcinoma arose from an apparently congenital cyst adherent to the gastrocolic omentum.[10] Solitary, large cysts of the peritoneum (other than enteric cysts of the mesentery, parasitic cysts and traumatic hemorrhagic cysts) are rare, and in particular, we were unable to find a report of a large, solitary cyst in the parietal peritoneum. The following is a report of a symptomatic case of this type.

REPORT OF A CASE

A 60-year-old white woman was admitted to the Hospital of The Good Samaritan on April 17, 1960, with the chief complaint of pain in the right upper quadrant of the abdomen. The pain had been present intermittently for six months and usually occurred after hard work which involved a great deal of reaching out with the right arm. It had recurred 20 minutes after a fatty test meal in connection with a recent cholecystogram. There had been no nausea, vomiting, fever, jaundice or loss of weight. The patient had been operated on 27 years previously for a tubal pregnancy, the operation including right salpingectomy, partial oophorectomy and appendectomy.

The patient appeared well-developed and well-nourished. Blood pressure was 135/80 mm. of mercury, the pulse rate 80 and oral temperature 98.8° F. The abdomen was soft, flat and nontender. There were no palpable organs or masses. Results of blood examination and urinalysis were within normal limits. An oral cholecystogram showed good concentration of dye within the gallbladder. There appeared to be a pressure effect on the distal portion of the fundus of the gallbladder (Figure 1) and a rounded shadow of increased density overlying the tip of the fundus. In the oblique projections, the tip of the fundus had a completely normal appearance. A barium enema showed no intrinsic or extrinsic lesions of the colon. The pressure effect on the gallbladder was independent of the hepatic flexure. An excretory urogram and upper gastrointestinal series showed no abnormality.

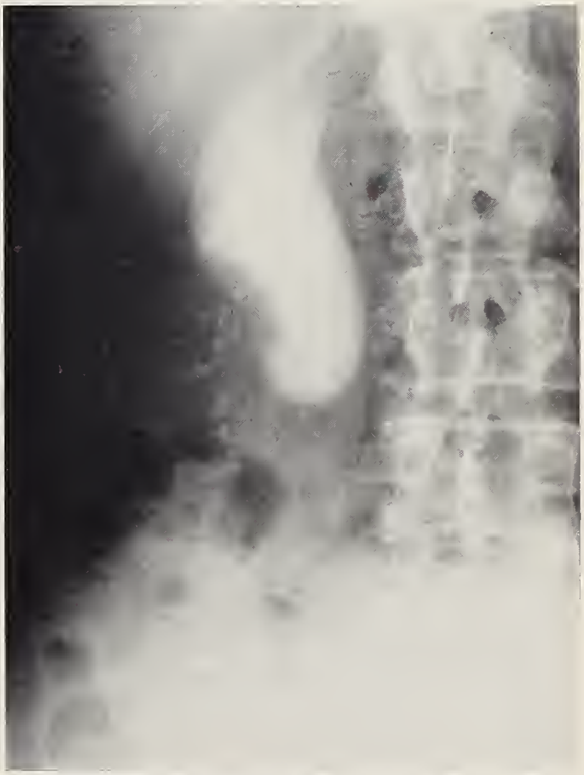


Figure 1.—Cholangiogram showing the pressure effect by the cyst on the gallbladder.

From the Departments of Surgery and Pathology, the Hospital of The Good Samaritan, Los Angeles 17.

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The abdomen was opened through a subcostal incision in the right upper quadrant. Attached to the peritoneum of the anterior abdominal wall on the upper flap of the incision by a short, flat pedicle was a unilocular cyst 5.5 x 4.5 cm. in diameter with a smooth, glistening, translucent surface (Figure 2). It was removed intact and submitted to the laboratory. No other cysts, free or attached, were found. The gallbladder was soft, compressible, and contained no palpable stones. The liver appeared to be normal and contained no cysts or tumors. There were "violin-string" adhesions between the right lobe of the liver and the diaphragm. Both ovaries were present and normal-appearing. Further exploration of the peritoneal cavity revealed no abnormalities.

The postoperative course was uneventful, and the patient was discharged from the hospital in good condition.

Pathologist's Report

The specimen, a thin-walled, semitranslucent, unilocular cystic structure 5.5 x 4.5 cm., had a smooth, glistening surface. A small amount of fibrous and muscular tissue was attached to one aspect of the cyst, apparently where it had been attached to the abdominal wall. On microscopic examination the cyst was seen to be lined with a single layer of uniform low cuboidal cells resembling mesothelial lining cells and having fairly uniform round or slightly oval, relatively pale nuclei (Figure 3). This apparently mesothelial lining was supported by a thin layer of relatively acellular collagenous fibrous connective tissue. The sections taken from the base of the lesion showed the adjacent skeletal muscle to be focally slightly fibrosed but to be otherwise not remarkable. The fibrous collagenous portions of the cyst wall formed the attachment of the lining to the striated muscle. Sections from a biopsy specimen taken from the liver at the time of the removal of the cyst showed no significant abnormalities.

COMMENT

A cyst of this size is likely to cause clinical symptoms regardless of location. In the present case, because of the location in the right upper quadrant and the extrinsic pressure on the gallbladder the possibility of cystic dilatation of the bile ducts was considered in differential diagnosis; but partly because of the absence of any jaundice and because of the age of the patient, this did not appear probable,[11] and a definite diagnosis could not be made before laparotomy. In other locations, solitary peritoneal cysts may simulate other conditions, and the possibility should be considered in the differential diagnosis of cystic intraabdominal lesions.

The histogenesis of peritoneal cysts is of interest, and several modified classifications have been published since Moynihan in 1897 originally classified them as serous, chyle, hydatid, blood, dermoid, and malignant cysts.[8] In contrast to the flat endothelial cells which line most of the multiple smaller cysts, the cells lining the cyst described in this communication are taller and cuboidal, and strongly resemble normal peritoneal or mesothelial cells. It is our belief, based mainly on this histologic appearance, that the cyst was mesothelial in origin rather than formed by the dilatation of lymphatic channels. The possibility of a wolffian cyst cannot be excluded on the basis of the morphologic appearance, but this

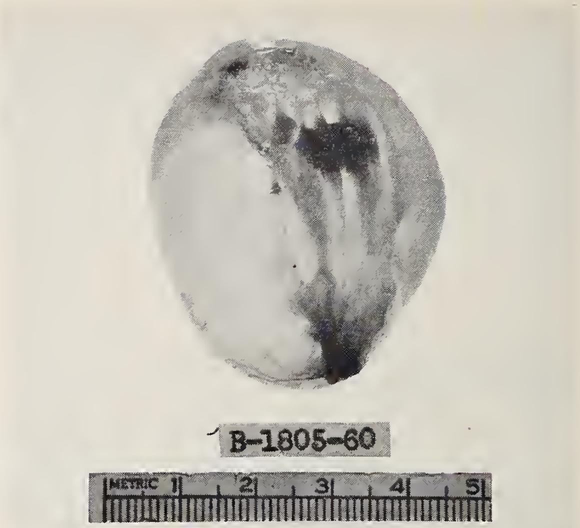


Figure 2.—Gross appearance of the cyst, with a small portion of adjacent muscle of the anterior abdominal wall.

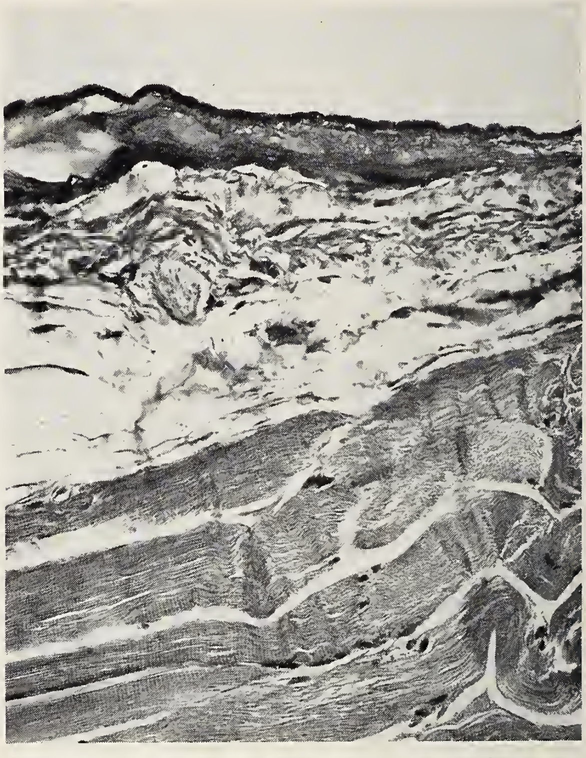


Figure 3.—Photomicrograph demonstrating the mesothelial cyst lining (×75).

pathogenesis is not likely in a lesion of the lateral upper anterior abdominal wall. In view of this histologic similarity, however, one might question whether all the frequently encountered cysts of the peritoneal and subperitoneal tissues of the female pelvic organs, and especially of the parovarian tissues, are indeed wolffian as is generally assumed, or whether some of them are not simply mesothelial cysts. The variance of the cells lining some of the peritoneal cysts described in the literature, some being reported as lined by stratified squamous epithelium,[1] is not surprising since the tissue culture studies by Stout and Murray[12] demonstrated that the versatile serosal covering cells may produce epithelial, fibroblastic or combined tumors.

SUMMARY

A case of a solitary mesothelial cyst of the parietal peritoneum in a 60-year-old white woman is reported. The lesion caused extrinsic pressure on the gallbladder, and was excised. Symptomatic peritoneal cysts of this size are rare, but the possibility of the presence of such a lesion should be considered in the differential diagnosis of intraabdominal cystic lesions. The pathogenesis of peritoneal cysts is briefly reviewed.

Hospital of The Good Samaritan, 1212 Shatto Street, Los Angeles 17 (Kern).

REFERENCES

1. Gagné, F.: Formations Kystiques Libres Dans La Cavité Peritonéale, Laval Medical, 24:184, Oct.-Dec. 1957.

2. Gagnon, G., Clough, D. M., and Roberts, L. W.: Intraperitoneal cysts, The Guthrie Clinic Bulletin, 19:133, Jan. 1950.

3. Heinz, J. D.: Subserosal cysts of the peritoneum, Australian and New Zealand J. Surg., 22:279, May 1953.

4. Hinshaw, J. R.: Unattached cysts in the peritoneal cavity, Ann. Surg., 145:138, Jan. 1957.

5. Keller, B.: Kystes peritoneaux formant obstacle à l'accouchement, Bull. Fed. Soc. Gyn. Obst. Fr., 5:605, 1953.

6. Krieger, J. S., Fisher, E. R., and Richards, M. R.: Multiple mesothelial cysts of the peritoneum, Am. J. Surg., 84:328, Sept. 1952.

7. Lord, J. W.: Multiple peritoneal cyst simulating carcinoma of the cecum, N. Y. State J. Med., 47:1607, July 1947.

8. Moynihan, B. G. A.: Mesenteric cysts, Ann. Surg., 26:1, 1897.

9. Plaut, A.: Multiple peritoneal cysts and their histogenesis, Arch. of Pathol., 5:754, 1928.

10. Saypol, G. M.: Carcinoma in congenital cyst of peritoneum, N. Y. State J. Med., 50:1281, May 1950.

11. Shallow, T. A., Eger, S. A., and Wagner, F. B.: Congenital cystic dilation of the common bile duct, Ann. Surg., 117:355, 1943.

12. Stout, A. P., and Murray, M. R.: Localized pleural mesothelioma, investigation of its characteristics and histogenesis by the method of tissue culture, Arch. of Pathol., 34:951, 1942.

13. Tedeschi, C. G., and Helpern, M. M.: Free cysts of the peritoneal space, Arch. of Pathol., 56:386, Oct. 1953.

14. Williams, C.: Large cysts of the abdomen, Virginia Med. Monthly, 83:423, Oct. 1956.

Acute Hemorrhage from Aberrant Pancreatic Tissue in the Gallbladder

I. JACK VIDGOFF, M.D., and
ALFRED LEWIS, M.D., Los Angeles

THE PRESENCE of aberrant pancreatic tissue in the gastrointestinal tract is not rare. It is noted about once in five hundred surgical operations.

The most common locations of aberrant pancreatic tissue are the stomach, the duodenum and the jejunum; less common locations are a Meckel's diverticulum, the capsule of the spleen and the gallbladder. The tissue is of congenital origin, probably becoming detached from the primary pancreatic anlage, then during development being transplanted to any of various positions and in different organs of the gastrointestinal tract.

The first case of aberrant pancreatic tissue in the gallbladder of a human was reported by von Hedry in 1924 (cited by Jacobson[2]). Since then five cases have been reported. In all the reported cases, the aberrant tissue was localized in the wall of the gallbladder and the symptoms were associated with calculi. In the case herein reported the lesion was not associated with calculi and the symptoms—acute inflammation with resultant hemorrhage into the gallbladder—were entirely due to changes in the tissue itself.

Diagnosis is only made by postoperative histological study of the removed gallbladder.

The symptoms are variable. There may be no symptoms, the diagnosis of gallbladder disease being made by the presence of calculi, with the aberrant tissue an incidental observation. In other instances the symptoms may depend on the pathological condition present within the aberrant tissue itself, such as inflammation, ulceration, hemorrhage or carcinoma.[3]

At operation the lesion may be observed as a mass in the wall of the gallbladder. It is usually soft and pulpy. In some instances the tissue may penetrate the mucosa and show dimpling due to the presence of pancreatic ducts, or it may show ulceration with or without signs of acute hemorrhagic cholecystitis.

Microscopically the appearance is typical of pancreatic tissue, with the presence of ducts and acini. Sometimes localized islands of Langerhans may be present.

REPORT OF A CASE

A man, 52 years of age, was admitted to the hospital July 5, 1960, with complaint of epigastric pain of one week's duration. It had begun rather suddenly following a drink of a cold nonalcoholic beverage. The pain was not referred to the shoulder or back, was confined mostly to the epigastrium, was not continuous but recurred on and off, and at times was severe. There was no nausea, vomiting or diarrhea.

Submitted December 2, 1960.

The patient had been a heavy drinker, but because of severe abdominal pain immediately after drinking, he had discontinued drinking alcohol more than a year previously.

Upon physical examination no jaundice was noted. The abdomen was tender with some rigidity in the right upper quadrant and extending into the epigastrium. Sounds of peristalsis were present. There was an infected wound on the right hand.

An x-ray film of the abdomen with the patient upright showed no subphrenic air and no dilatation of the small intestine. X-ray films of the chest showed diffuse emphysema.

The amylase value of the blood was 144 units and the transaminase content was within normal limits. Moderate elevation of urinary diastase was noted on two determinations. Results of urinalysis were within normal limits. Hemoglobin content of the blood was 15.1 gm. per 100 cc. and packed cell volume was 43 per cent. Leukocytes numbered 10,500 per cu. mm.—71 per cent polymorphonuclear cells, 25 per cent lymphocytes, 3 per cent eosinophils and 1 per cent stab cells.

The diagnosis was mild pancreatitis and the patient was treated conservatively.

Ten days later his condition was improved enough to permit further diagnostic studies. Serologic tests were negative for syphilis. In x-ray films of the gastrointestinal tract, a small hiatal hernia, with no reflux and no ulcer, was seen. No abnormalities were seen in barium enema films. Gallbladder studies, first with a normal amount of dye taken by mouth and then with a double dose, showed no filling. No calculi were visible. Cholecystectomy was contemplated but because of the infected hand it was thought best to send the patient home and have him return for elective cholecystectomy after the hand wound had healed.

The first day at home the patient had mild epigastric distress and on the second day an acute episode of severe pain in the right upper quadrant with vomiting. He was readmitted to the hospital. The temperature was 101° F. Extreme tenderness and rigidity were noted in the right upper quadrant of the abdomen and a tender mass was palpable there. Moderate leukocytosis was present. A diagnosis of acute cholecystitis was made and the patient was prepared for emergency operation.

There was a moderate amount of serosanguinous fluid in the abdominal cavity. The stomach and duodenum and the pancreas appeared normal. The gallbladder was greatly distended, edematous and thickened. Because of the huge distention, the gallbladder was emptied with trocar and suction, and bright red blood was obtained. When the distention was reduced the gallbladder could be better palpated. A nodule, thought to be a stone, was felt near the cystic duct. The common duct was not distended, and no calculi were palpable. Removal of the gallbladder from above downward was car-

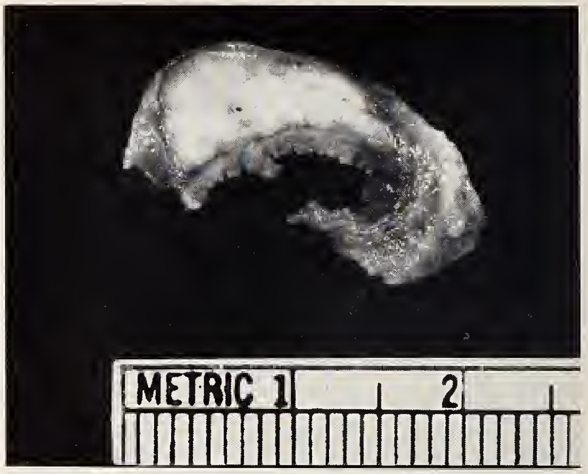


Figure 1.—Cross-section showing ectopic pancreatic tissue in relationship to the gallbladder. There are areas of infection with very thickened and hemorrhagic mucosa of the gallbladder.

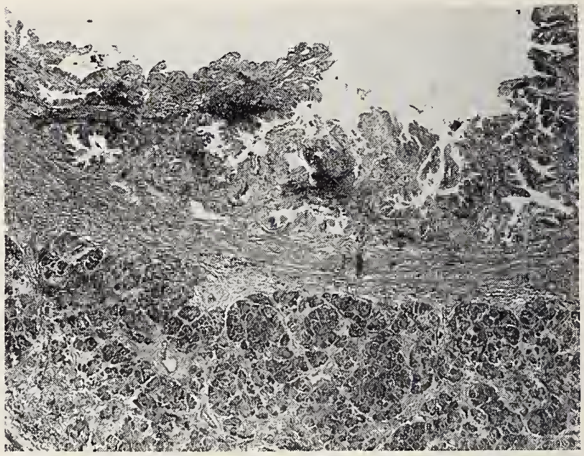


Figure 2.—Microscopic view of pancreas and gallbladder mucosa with areas of hemorrhage and fecal ulceration (×250).

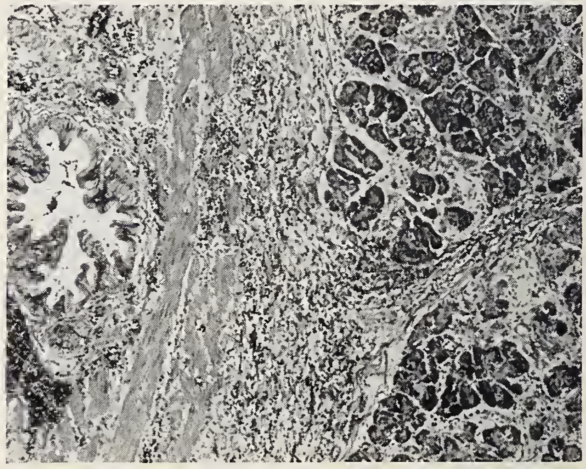


Figure 3.—High power view showing cellular infiltrate and pancreatic acini (×400).

ried out. The cystic duct and cystic artery were separately ligated and, after a drain had been placed in the pouch, the abdomen was closed in layers.

The patient was discharged from hospital on the seventh day.

Pathologist's Report

The gallbladder was 10 cm. long and 3.5 cm. in diameter. Edematous and firm, the wall of the gallbladder was 0.6 cm. thick. The lumen was filled with blood. The mucosa was grossly hemorrhagic, the hemorrhagic process extending down to the cystic duct (Figure 1). Three centimeters from the resected end of the mucosa was a 0.2 cm. area of ulceration, and beneath it and involved with it was a discrete nodule 1.0 x 0.5 cm. which resembled pancreas. No calculi were present.

Pronounced edema of serosa and muscular tissue was noted on microscopic examination of sections of the gallbladder. The muscularis showed hypertrophy and there was a heavy neutrophilic infiltration throughout all layers of the gallbladder. There was ulceration with heavy interstitial hemorrhage in the mucosa (Figure 2) and in the nodule which protruded into the mucosa. The acini and ducts were those of pancreatic tissue. They were dilated and showed squamous metaplasia. Numerous islets were present (Figure 3).

The pathologic diagnosis was: Acute hemorrhagic cholecystitis; acute hemorrhagic ectopic pancreatitis; focal ulceration of mucosa; ectopic pancreas, gallbladder; squamous metaplasia in the ducts.

COMMENT

From the clinical course in this case—first consistent with mild pancreatitis, then a sharp increase in pain and development of symptoms consistent with acute cholecystitis—and the conditions observed at operation and by pathological study, it appears that what actually happened was a sudden hemorrhage into the gallbladder. This occurrence was comparable to hemorrhage from aberrant pancreatic tissue such as is sometimes seen in the stomach and duodenum, the hemorrhage being produced by acute pancreatitis in the aberrant tissue with subsequent ulceration of mucous membrane.

We believe that all the symptoms were produced by changes in the aberrant pancreatic tissue itself.

SUMMARY

Ectopic pancreatic tissue in the gallbladder is a fairly uncommon occurrence. In most instances it is an accidental finding following cholecystectomy for calculi. In the case here reported the symptoms were produced by changes in the pancreatic tissue itself and no calculi were present.

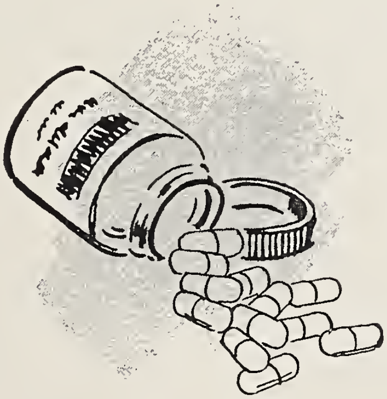
6333 Wilshire Boulevard, Los Angeles 48 (Vidgoff).

REFERENCES

1. Elfing, G.: Heterotopic pancreatic tissue in the gallbladder wall, Acta Chir. Scandinov., 118:32-36, 1959.

2. Jacobson, A. S.: Accessory pancreas in wall of gallbladder, Arch. Path., 30:908, 1940.

3. Vidgoff, I. J.: Massive hemorrhage due to aberrant pancreatic tissue in cardia of stomach, Am. J. Surg., 9:423-426, 1957.



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EDITORIAL

Best Foot Forward

One recommendation made to the Council by the Special Ad Hoc Committee on Continuing Education and Scientific Activities of the California Medical Association will, when implemented, give new impetus to the Association's primary purpose as stated in the Constitution: "To promote the science and art of medicine, the protection of the public health and the betterment of the medical profession."

As a preface to its report, the Committee pointed out that the C.M.A. cannot continue to occupy a position of importance in the legislative and socioeconomic negotiations with which it has had to concern itself more and more in recent years, unless at the same time it commands the scientific respect of its constituents and the public. In this connection it was noted that not only is scientific medicine the one universal compelling interest among physicians and the single greatest adhesive force in a widely diversified profession; it is also the aspect of the professional organization that gets the greatest respect and admiration from the public.

The Committee proposed setting up within the C.M.A. a Scientific Board which would serve at once to invigorate all the Association's educational and scientific activities, to draw them together in a logical whole, to give them direct representation on the Council and in the House of Delegates and to enlist the good will, the advice and the cooperation of some of the best scientific and educational organizations in the western United States. The Board would have two new responsibilities beyond the coordination and improvement of scientific and educational functions already being performed by the Medical Association. One is to form a Committee on Scientific Information to serve as a source of information to the public (with regard to such matters as live poliomyelitis vaccine) and to C.M.A. members. The other is to establish a Foundation for the collection and distribution of funds for continuing medical education in California.

The recommendation was consistent with the purposes of the Committee, which was formed more than a year and a half ago because of growing concern in C.M.A. leadership over evidence of diminishing interest in the Association's scientific assemblies and a tendency toward fragmentation and lack of cohesiveness and coordination of medical educational facilities, both within the Association and without.

The Scientific Board proposed by the Committee would have 36 members, one each to be named by the present 18 Scientific Sections and the remaining 18 to be members-at-large who would be C.M.A. members but would be nominated for the Board by scientific organizations other than the California Medical Association. The organizations named to make such nominations would be "statewide or local divisions of national organizations or important groups in the western United States or California, such as the American College of Physicians, American College of Surgeons, California Academy of General Practice, American College of Obstetricians and Gynecologists, etc." All the 36 members would be seated as representatives of the Board in the House of Delegates. One Board member would be elected to the Council and in addition the chairman of the Board would be an ex officio member of the Council.

In its recommendations and in designing this structure for improving what is best in a medical association, from the professional as well as from the public point of view, the Committee has offered the C.M.A. a means of putting its best foot forward.

Substandard Clinical Laboratories

THE LAST FEW MONTHS have seen a renewed campaign, by mail, by out-of-state clinical laboratories to secure the laboratory work of physicians practicing here.

In the language of law and economics, *caveat emptor*—let the buyer beware.

Investigation has shown that some laboratories which handle an across-the-border service are entirely reliable. Others, unfortunately, are not. In the case of the latter group, physicians are well advised, for the benefit of their patients as well as themselves, to look carefully into the quality of the service provided by clinical laboratories which are known to them only through mail contacts.

Last October both *Time* and *Newsweek* magazines published stories about one particular laboratory under the respective headings "Larceny in the Labs" and "The Deadly Mistake." These reports point up the wisdom of careful inquiry by physicians into the clinical laboratories to which they may send specimens for testing.

California is one state where strict standards are maintained over clinical laboratories, whether they be operated by physicians or by clinical laboratory bioanalysts. Licensing laws have been drawn to protect the public against incompetent or poorly trained technologists. California laboratories today are adequate in all respects to handle the clinical pathological needs of the state's physicians.

The same safeguards are not available when a laboratory from another state sees fit to carry on a solicitation campaign by mail. While such a laboratory might be unable to meet California standards, it can circumvent these barriers by using the mails to cross state lines in offering its services to California physicians.

California laws also prohibit rebates and fee-splitting. Obviously, these laws are unenforceable where the guilty party is located outside the state's borders and able to offer such blandishments in the effort to pick up additional business.

A recent test of the services of one out-of-state laboratory indicated the professional shortcomings of this firm, obvious faults which could react seriously against a patient or his physician, or both.

Arrangements were made to send specimens to the out-of-state laboratory and, as a control, to licensed laboratories in California. Urine specimens from a group of known diabetics were dispatched on this basis; the mail-order laboratory reported glucose determinations that were uniformly low.

One specimen examined by the mail-order laboratory for urea nitrogen was reported as 11.5 mg. per 100 cc. Two California laboratories found more than 100 mg. per 100 cc. in portions of the same specimen. The creatinine in this specimen was reported by one California laboratory at 18.3 mg. per 100 cc. and by another at 20.2 mg. per 100 cc. The mail-order laboratory did not even determine the creatinine content, doubtless due to the relatively low finding of urea nitrogen in the specimen.

In another test series, red blood cells and acetone were deliberately added to the urine specimens. Neither of these substances was reported to the physician by the mail-order firm. In still another sampling, leukocyte counts of 11,700 per cu. mm. and 8,900 per cu. mm. were reported from portions of the same specimen. The California laboratory used as a control showed 5,100 per cu. mm.

These examples should be sufficient to frighten any physician who may be relying on such laboratories for testing procedures to be used in the care of his patients. Where accuracy, thoroughness and reliability are most needed, poor laboratory findings may mean the difference between a sick and a well patient, or the difference between a competent physician in his own office or a less careful physician in the courthouse.

In addition to the solicitation of physicians, some out-of-state laboratories are even making direct mail pitches to "Resident" under the so-called "junk mailing" permits. A recent direct-mail piece offered diabetics a quarterly urine testing service, doubtless secure in the knowledge that any bulk mailing in any area will reach a certain number of diabetics who are aware of their own condition. These patients, like others suffering from chronic conditions, are likely to have a degree of basic knowledge which, carefully correlated with the services of a physician, may aid in their overall treatment. When, however, laboratory testing of this type is put within their grasp for a flat annual cost, there is no control over the use to which the patient may put the findings mailed to him by faceless, unknown technicians.

Such procedures open the doors wide for self-diagnosis and self-treatment.

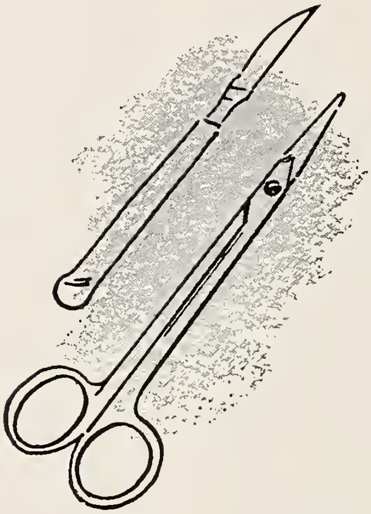
Clinical laboratories which operate across state lines may be of extremely high caliber and fully qualified for the approval of conscientious physicians who may find their services convenient and helpful. This may be particularly true near the borders of the state, where a high-quality laboratory in a neighboring state may fill the physician's needs better than a California laboratory which is more distant. With laboratories in this class, there can be no quarrel over extending their services on a geographical radius which crosses state lines.

There is ample room, however, for questioning the activities and the services of nameless laboratories which solicit business by mail, especially if they offer cut-rate services or flat charges which are out of consonance with accepted practices in the various areas of California. There is no place in this state for rebates or their counterparts under any guise.

While present state laws cannot stop some of these practices, the actions of physicians can. If every physician using out-of-state laboratory services will investigate the quality of these services and the standing of the men performing them, and will accept nothing but the highest standards, this sort of shady practice can be run out of business. The physician who patronizes these firms is risking the physical health of his patient and his own moral and financial health.

In case of doubt, the California Medical Association, the local county medical society or the Laboratory Field Services of the California State Department of Public Health, in the Berkeley or Los Angeles offices, can provide a sound evaluation service.

If, after inquiry, the reliability of a laboratory is not given a completely clean bill of health—we repeat, *caveat emptor*.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 467th Meeting of the Council, Hilton Inn, San Francisco, March 18, 1961.

The meeting was called to order by Chairman Sherman in the Hilton Inn, San Francisco International Airport, on Saturday, March 18, 1961, at 9:00 a.m.

Roll Call:

Present were President Foster, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, O'Connor, Shaw, Rogers, Dalton, Murray, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall. Absent for cause, President-Elect Bostick.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Tobitt, Bowman, Whelan, Klutch and Edwards and Drs. Batchelder and Miller of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read and Salisbury of the Public Health League; county society executives Scheuber of Alameda-Contra Costa, Lingerfelt of Fresno, Geisert and Smith of Kern, Field of Los Angeles, Grove of Monterey, Somerville of Napa, Bannister of Orange, Colvin of Santa Clara, Brayer of Riverside, Nute of San Diego, Neick of San Francisco, Thompson, Monnich and Pearce of San Joaquin, Wood of San Mateo, Bailey of Tulare, Blankfort of Marin, Funk of Solano, Brown of Sonoma; Messrs. Paolini, Wahlberg, Nyron and Lyon of California Physicians' Service; Mrs. Eunice Evans of the State Department of Social Welfare and Drs. Dan O. Kilroy, J. B. deC. M. Saunders, Wayne Pollock and others.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 465th Council meeting, held January 28, 1961, were approved.

(b) On motion duly made and seconded, minutes of the 466th Council meeting, held February 10-11, 1961, were approved.

2. *Membership:*

(a) A report of membership as of March 15, 1961, was presented and ordered filed.

(b) On motion duly made and seconded, two delinquent members who have qualified were voted reinstatement.

(c) On motion duly made and seconded in each instance, 28 applicants were voted Associate Membership. These were: Carol R. Bahcall, Max Wm. Biggs, George D. Brown, Steven H. Cornell, A. Gerson Hollander, Edward Manougian, Julian Arnold Waller, Alameda-Contra Costa County; Abraham Howard Dulmes, James R. Glessner, Jr., Jack R. Kennedy, George Charles Raszus, Lysle Orting Shaw, Louis J. Zeldis, Los Angeles County; Floyd Hohnstein, Ralph T. Duddles, Napa County; Alyson L. Palmer, San Bernardino County; Karl E. Carlson, William Philip Creger, Frederick C. Greaves, M. J. Holdsworth, Joseph P. Kriss, Thomas H. Llewellyn, John C. Marchesi, David E. McCarthy, Santa Clara County; Mathew Sorin, San Joaquin County; Alton Coy Abernethy, Sonoma County;

PAUL D. FOSTER, M.D.	President
WARREN L. BOSTICK, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
SAMUEL R. SHERMAN, M.D.	Chairman of the Council
RALPH C. TEALL, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
DWIGHT L. WILBUR, M.D.	Editor
HOWARD HASSARD	Executive Director
JOHN HUNTON	Executive Secretary

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Bernard Goodman, David Ta-fu Wu, Ventura County.

(d) On motion duly made and seconded in each instance, 26 members were voted Retired Membership. These were: Ina Gourley, Alameda-Contra Costa County; Hildreth Caldwell, Albert James Campbell, John F. Chapman, Philip M. Dale, R. Bruce Eldredge, James P. Gillis, Roland Y. Glidden, Margaret Farr Hara, Charles J. Harbeck, Cullen Ward Irish, Ralph F. Miller, John G. Norman, William Novick, Joseph C. Savage, Jane Skillen, W. Leslie Stevens, Charles E. Stolz, Los Angeles County; John Andrew Wood, Orange County; James J. Cecil, San Bernardino County; Roland Davison, Rudolph L. Dresel, Frank A. Kinslow, San Francisco County; Herbert Lee Niebel, Lois Pendleton Todd, Santa Clara County; Granville S. Delamere, Yuba-Sutter-Colusa County.

(e) On motion duly made and seconded, 29 members were voted a reduction in dues because of postgraduate study or prolonged illness.

3. *Committee for Emergency Action:*

President Foster reported on a meeting of the Committee for Emergency Action, at which time discussion was held on the possible use of radio and other media of communication as a means of informing the public on economic aspects of medical care.

Discussion was also held on the subject of public speaking and on the feasibility of distributing to the membership a copy of a series of articles entitled "Time for Decision" prepared under the guidance of Dr. Foster. Following these discussions, the following actions were taken:

It was regularly moved, seconded and voted that the chairman appoint a committee to investigate the formation of a speakers' bureau, utilizing the services of officers, staff and Woman's Auxiliary. (Chairman Sherman named Councilors Teall and Anderson as co-chairmen of such committee, they to select other committee members.)

It was regularly moved, seconded and voted that the Committee on Public Relations and the staff look into the feasibility and cost of using radio as a public relations medium.

It was regularly moved, seconded and voted that the "Time for Decision" articles be distributed to the membership, provided California Physicians' Service met the cost of such distribution and further provided a footnote accompany the articles to point out the fact that not all items in these articles necessarily represent Association policy but are distributed for informational and educational purposes and that there is wide divergence of opinion on these matters among C.M.A. members.

4. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare reviewed some of the measures now before the State Legislature. One bill would restrict or eliminate health evaluation physical examinations for aged welfare recipients; another would provide for the care of chronically ill recipients in nursing homes or private hospitals and another provide for such care in county hospitals only. Mrs. Evans stated the department was attempting to compose the differences in some of these legislative proposals.

5. *California Physicians' Service:*

Dr. Morrison reported that letters have been sent to all physician members of California Physicians' Service relative to the inauguration of the D and E schedules of fees and that good response has resulted. He also reported that recommendations of the 1960 House of Delegates relative to deductibles in contracts, coverage for neuropsychiatric services and other items had been implemented. There are now, he reported, about 980,000 subscribers and 14,500 physician members of C.P.S.

Dr. Morrison also reported that additional costs of $25,000 annually were anticipated from the removal of the $1 co-payment provision in the MD-65 program, which had been approved by C.P.S. and by the Council. Projecting this added cost would indicate, he reported, that the Association would be liable for losses of an estimated $8,000 by the middle of 1963 and as much as $59,000 by 1965 under the stop-loss agreement in effect. Inasmuch as this agreement requires approval for any changes in the program, it was regularly moved, seconded and voted that the stop-loss agreement be amended to provide for the elimination of the co-payment by patients and still remain in effect.

6. *Committee on Committees:*

The Committee on Committees recommended that the Council nominees for appointment to the C.P.S. Board of Trustees be as follows: Orville W. Cole, Jr., M.D., Long Beach, to succeed Arlo A. Morrison, M.D.; Donald C. Harrington, M.D., to succeed Dave Dozier, M.D.; Mr. Thomas Hadfield to be reappointed; Mr. James Cowee to succeed the Rt. Rev. Msgr. T. J. O'Dwyer; and Mr. Arnold Callen, Oakland, United Automobile Workers, to fill a vacancy. On motion duly made and seconded, these nominees were approved for presentation to the House of Delegates.

7. *Finance Committee:*

(a) Chairman Heron of the Finance Committee presented reports of current cash balances and of income and expenditures for the eight months ended February 28, 1961. These were ordered filed.

(b) Dr. Heron also presented a proposed budget for the 1961-1962 fiscal year, together with several policy items on which Council determination was requested for budgeting purposes. On motions duly made and seconded, it was voted to reduce the maximum size of committees to nine members, to discontinue some committees or consolidate their functions with others, to reduce some committees to liaison status and to direct the staff to prepare amendments to the procedural rules of committees in regard to meeting schedules for purposes of better budget control. It was also moved, seconded and voted that incorporation of a research foundation be approved for the receipt of research funds.

8. *Committee on Scientific Activities:*

Dr. Wilbur, chairman, and Drs. Joseph W. Telford and John B. deC. M. Saunders, members of the ad hoc Committee on Scientific Activities and Continuing Education, presented the report of the committee, with a number of recommendations for the handling of postgraduate education, annual scientific assemblies and scientific publications.

On motion duly made and seconded, it was voted to commend the committee for its work and to express gratitude to it for a thorough and enlightening report.

On motion duly made and seconded, it was voted to authorize the chairman to appoint a study committee which, in consultation with the Committee on Committees, Finance and Medical Education, should study the report and bring in recommendations for action.

The committee also recommended action on several resolutions and By-Law amendments referred to it by the 1960 House of Delegates. On motions duly made and seconded in each instance, the following actions were taken:

Resolution No. 50—Referred to study committee above.

Resolution No. 42—Disapproved.

Resolution No. 55—Referred to study committee above.

By-Law Amendment No. 8—Disapproved at this time.

By-Law Amendment No. 9—Disapproved at this time.

By-Law Amendment No. 13—Approved.

(The chairman appointed a study committee as follows: Dr. Bostick, chairman; Drs. Doyle, Quinn, MacLaggan, Davis, Dalton, Campbell and Wilbur, members.)

9. *Committee on Other Professions:*

Dr. Wayne Pollock, chairman of the Committee on Other Professions, presented the draft of an agreement between the Association and the California Osteopathic Association to provide the mechanism for the unification of the medical and osteopathic professions in California. The agreement, he reported, had already been approved by the Board of Trustees of the C.O.A. and would, if approved by the Council be submitted to the House of Delegates of each association for approval. If so approved, steps could be taken immediately to implement the agreement.

On motion duly made and seconded, it was voted to approve the proposed agreement and to forward it to the members of the House of Delegates with recommendation that the House likewise approve.

On motion duly made and seconded, the Council voted its thanks and commendation to Dr. Pollock and his committee for the fine work represented by the agreement.

10. *Bureau of Research and Planning:*

Mr. Klutch reported that seven of a series of economic reports had been completed, three more were under preparation and five more planned. These would be published in *Newsletter*. The Council agreed to such publication after approval of the reports by the Bureau.

11. *Commission on Cancer:*

Dr. Davis, chairman of the Commission on Cancer, reported that several meetings had been held on the subject of updating and republishing the "Cancer Studies" issued several years earlier by the commission. Later reports will be made on this subject.

12. *Medical Review and Advisory Board:*

Dr. Kirchner, chairman of the Medical Review and Advisory Board, reported on the successful medical-legal conference held in San Francisco under A.M.A. auspices. About 800 people, equally divided between physicians and attorneys attended the two-day session.

Dr. Kirchner also reported that three articles on professional liability insurance had been prepared and would be presented to CALIFORNIA MEDICINE for publication if the Council approved. On motion duly made and seconded, authority to submit these articles was voted.

13. *Commission on Public Agencies:*

Dr. Wheeler, chairman of the Commission on Public Agencies, discussed two legislative proposals relating to hypnosis, one of which would limit the use of hypnosis to licensed physicians, dentists and psychologists and one which would create a new board to license those who would use this form of practice. On motion duly made and seconded, it was voted to refer the restrictive measure to the Committee on Legislation and to oppose the proposal for a new licensing board.

Dr. Wheeler also presented a set of ten principles relating to hypnosis, as developed by the commission. On motion duly made and seconded, this set of principles was approved as policy.

14. *Committee on Legislation:*

Dr. Kilroy, chairman of the Committee on Legislation, reported that a resolution had been introduced in the State Senate to eliminate the health evaluation examinations which had previously been approved by the State Department of Social Welfare to be made on welfare applicants in the 65 to 70-year group. On motion duly made and seconded, it was voted to refer this proposal to the Committee on Legislation and the Liaison Committee to the State Department of Social Welfare for a later report to and policy decision by the Council.

Mrs. Eunice Evans, deputy director of the State Department of Social Welfare, stated that the department's program would not be put into effect while legislation on this subject was under discussion.

15. *Legal Department:*

Mr. Hassard reported that the Joint Council to Improve the Health Care of the Aged had voted to establish a joint commission for the accreditation of nursing homes and would plan for inspections and accreditation procedures if an estimated $25,000 could be raised to initiate the plan. It was estimated that these funds would be returned in about 18 months through examination fees. On motion duly made and seconded, it was voted to refer to the Finance Committee the request that the Association advance $20,000 as its share of the initial working funds.

16. *Medic-Alert Foundation:*

A request for recognition by the Association of Medic-Alert Foundation was presented. It was pointed out that the foundation has now been incorporated as a nonprofit organization and that interest has been shown in the organization from areas in all parts of the world. On motion duly made and seconded, it was voted to reaffirm an earlier decision to the effect that identification of patients in the interest of their health care was a desirable project and that the Medic-Alert devices are a useful and valuable means of such identification.

17. *Chamber of Commerce of the United States:*

Dr. Todd presented a resolution in praise of the Chamber of Commerce of the United States and its state and local counterparts for their stand in support of the principles of economic freedom and opportunity. On motion duly made and seconded, this resolution was approved and ordered introduced into the House of Delegates.

18. *Alcoholism and Narcotic Addiction:*

Dr. Quinn presented a resolution calling attention to the human and economic waste involved in alcoholism and narcotics addiction and urging physicians and medical societies to take the lead in law enforcement and public education to eradicate these conditions. On motion duly made and seconded, this resolution was approved and ordered introduced into the House of Delegates.

19. *Physically Handicapped College Students:*

Dr. Anderson proposed that the Committees on Rehabilitation and School Health jointly study the feasibility of urging that one or more of six new state colleges be designed architecturally to permit physically handicapped students to attend and secure the education for which they are equipped but currently denied because of architectural obstacles. On motion duly made and seconded, this resolution was adopted.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:30 p.m.

SAMUEL R. SHERMAN, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

In Memoriam

Barker, Lawrence F. Died March 14, 1961, aged 47, of an acute coronary occlusion. Graduate of St. Louis University School of Medicine, Missouri, 1940. Licensed in California in 1945. Doctor Barker was a member of the Los Angeles County Medical Association.

✣

Bormann, George Benjamin. Died in Hollywood, March 23, 1961, aged 79, of heart disease. Graduate of Northwestern University Medical School, Chicago, Illinois, 1908. Licensed in California in 1921. Doctor Bormann was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Elsbach, Kurt. Died March 29, 1961, aged 62. Graduate of Ludwig-Maximilians-Universitat Medizinische Fakultat, München, Bavaria, Germany, 1924. Licensed in California in 1937. Doctor Elsbach was an associate member of the Los Angeles County Medical Association.

✣

Evans, John Frank. Died March 22, 1961, aged 54, of heart disease. Graduate of Meharry Medical College, Nashville, Tennessee, 1933. Licensed in California in 1944. Doctor Evans was a member of the Los Angeles County Medical Association.

✣

Hale, John M. Died March 10, 1961, aged 61. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1940. Licensed in California in 1941. Doctor Hale was a member of the Los Angeles County Medical Association.

✣

Hall, George Peter. Died February 12, 1961, aged 72. Graduate of Cooper Medical College, San Francisco, 1909. Licensed in California in 1909. Doctor Hall was a member of the Santa Clara County Medical Society.

✣

Leftwich, Oda Taswell. Died in Oakland, April 10, 1961, aged 84, of lymphosarcoma of the colon. Graduate of Ensworth Medical College, St. Joseph, Missouri, 1906. Licensed in California in 1923. Doctor Leftwich was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Logsdon, Ronald O. Died April 4, 1961, aged 74. Graduate of the University of Louisville School of Medicine, Kentucky, 1909. Licensed in California in 1927. Doctor Logsdon was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Long, Frank Edison. Died in Inglewood, March 20, 1961, aged 70. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1919. Licensed in California in 1921. Doctor Long was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Mainzer, Theodor. Died April 13, 1961, aged 42. Graduate of Rheinische Friedrich-Wilhelms-Universitat Medizinische Fakultat, Bonn, Prussia, Germany, 1947. Licensed in California in 1952. Doctor Mainzer was a member of the Los Angeles County Medical Association.

✣

McClelland, Preston H. Died April 1, 1961, aged 62, of heart disease. Graduate of Rush Medical College, Chicago, Illinois, 1931. Licensed in California in 1934. Doctor McClelland was a member of the Los Angeles County Medical Association.

✣

Miller, Edward A. Died in Indio, March 11, 1961, aged 53, of heart disease. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1936. Licensed in California in 1942. Doctor Miller was a member of the San Bernardino County Medical Society.

✣

Moran, Frank Anthony. Died in San Francisco, April 8, 1961, aged 55. Graduate of Stritch School of Medicine of Loyola University, Chicago, Illinois, 1936. Licensed in California in 1936. Doctor Moran was a member of the San Francisco Medical Society.

✣

Rounseville, Wayne Joseph. Died in Oakland, April 12, 1961, aged 41, of myocardial infarction due to arteriosclerosis. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1950. Licensed in California in 1950. Doctor Rounseville was a member of the Alameda-Contra Costa Medical Association.

✣

Smith, Jacob Oscar. Died in San Francisco, April 1, 1961, aged 53, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1932. Licensed in California in 1932. Doctor Smith was a member of the San Francisco Medical Society.

✣

Thomas, Walter Claude. Died April 11, 1961, aged 65. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, Indiana, 1921. Licensed in California in 1924. Doctor Thomas was a member of the Los Angeles County Medical Association.

✣

Wentworth, William E. Died March 1961, aged 64. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1946. Licensed in California in 1946. Doctor Wentworth was a member of the Napa County Medical Society.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

To ASSIST in combating the increase in venereal disease in California, the department has received a $27,563 grant from the U. S. Public Health Service to strengthen case finding activities in local health departments, with emphasis on infectious syphilis.

During the last five years the reported incidence of infectious syphilis has increased by 300 per cent. There has been a continuing upswing in primary and secondary syphilis, with cases reported last year 50 per cent above those for 1959. In 1960 there were 1,581 cases reported, compared with 1,038 in 1959 and 831 in 1958.

As part of the federal assistance the Public Health Service will assign eight public health trainees to local health departments to work as epidemiologists in the case finding programs, and to assist in the planning, development and evaluation of methods used to control the spread of syphilis and other venereal diseases.

The trainees also will maintain liaison with practicing physicians, interview venereal disease patients and perform venereal disease contact investigations.

* * *

Glaucoma is a threat to the vision of one out of every 50 Californians over the age of 40. The department's Prevention of Blindness Program has undertaken an intensive public and professional education effort. A major program aid in this campaign is a recently completed exhibit on glaucoma through which the public is alerted to the dangers of the disease, the warning signs, and how it can be detected early enough to save sight.

Local health departments will use this exhibit and educational material produced by eye specialists in endeavors to develop community awareness of this preventable form of blindness.

As a joint effort with the Santa Clara County Medical Society, the San Jose City Health Department now operates a glaucoma detection center for any resident in the community. The center, open twice weekly, is operating at capacity.

* * *

The most recent problem to become a major public health concern is exposure to ionizing radiation. Such exposure arises from medical, occupational and environmental sources. The department is developing programs in all three of these areas.

The principal effort is one of continuous surveillance of the environment to determine the degree and extent of human radiation exposure. The data obtained provide a basis for action in long-range preventive programs and in radiation emergencies, and will assist in the orderly development of a radiological health program.

As man-made uses of nuclear energy and its radioactive by-products increase, radiological contamination of the environment will inevitably increase. Thus, the rationale is for a program to obtain base line data now, and to watch carefully for increases in environmental contamination so that any necessary corrective action can be taken in time to avert hazardous situations.

To these ends a variety of environmental media are periodically sampled and analyzed for radioactive content. These media include air, water, soil, native vegetation, vegetables, fruit, field crops, milk, meat, poultry, eggs, fish, shellfish, sewage, snow and rain.

Special attention is given to major population centers, to major food producing regions and to areas around major nuclear installations.

A continuing program is being carried out to improve and refine sampling and analytical techniques. It is expected that ultimately the total effort can be reduced as more information becomes available as to specific environmental indicators that can be used to generalize environmental contamination levels.

It is planned to publish the data obtained from this program in a regular series of quarterly reports, the first of which will be published shortly and distributed to interested agencies.

* * *

The State Health Department has contracted with Cedars of Lebanon Hospital Rehabilitation Center in Los Angeles for two five-day courses for nurse supervisors of nursing homes with more than 25 beds. The project is supported with funds from the U. S. Public Health Service 1961 General Health Grant, and is one of several activities sponsored by the department to improve patient care in nursing homes in California.

The course will cover techniques and procedures of rehabilitation nursing through demonstration and practice sessions, as well as the concepts and principles of supervision and the methods of trained nursing personnel in nursing homes. The faculty will be made up of specialists in the fields of medicine, nursing and rehabilitation.

INFORMATION

Suit Against Physicians for Hospital Medical Staff Activities

Extension of Professional Liability Coverage

Physicians have asked: "Does my professional liability insurance contract protect me when I officially participate in the activities of a hospital medical staff committee? Or does the liability insurance policy of the hospital agree to defend me and hold me harmless should damages be assessed for the action of a medical staff committee?"

The Joint Medicolegal Education Committees of C.M.A.-C.H.A. and A.M.A.-A.H.A. have studied these questions in order to inform the members of our profession.

When the inquiry started, the answer to both these questions was, at best, doubtful in some policies, and in others it was "no."

The C.M.A.-C.H.A. Joint Medicolegal Education Committee is unanimous in its recommendation that a physician should be able to obtain adequate coverage for this potential liability. Each member of the profession serving on hospital medical staff committees and on a county medical society committee is strongly urged to secure adequate insurance for his participation.

County Medical Society Committee Activity

One county medical society has secured a certificate of insurance to indemnify and protect against any claims against physician-members of any county medical society committee for the performance of his official duties as a member of a committee. It is recommended that all county societies study the need for such a policy.

Hospital Medical Staff Committee Activity

Recently, in California, three county medical society group malpractice insurance carriers (one in northern and two in southern counties) have endorsed their individual professional liability policies to afford protection to physicians for their participation in medical staff committee activities and decisions. The endorsement of the group policies providing this coverage reads as follows:

> *Policy A:* "It is agreed that such insurance as is afforded by Part I of the policy shall also apply to injury arising out of or resulting from any claim or suit alleging libel, slander or defamation of character, brought against certificate holders, acting in the course of their duties as members of duly authorized committees of either the named insured or an accredited hospital, provided such members are so acting with and upon the advice of competent legal counsel."

The advice of counsel is stipulated in order that county medical society and hospital staff committees seek legal opinion concerning the technical procedural steps taken and the probable by-law authority of the committee when it relates to decisions which affect the rights and privileges of those who might claim to be injured.

> *Policy B:* "It is agreed that such insurance as is afforded by the policy also applies to damages for which the named insured or his estate may be legally liable by reason of his official participation as a committee member on the staff of any hospital accredited by the Joint Commission on Accreditation of the American Medical Associaition and American Hospital Association."

The California Hospital Association group liability program has also extended its coverage to include defense of actions taken against organized medical staffs in the performance of their hospital staff administrative functions for the physicians who are not otherwise insured. The Committee on Insurance of the California Hospital Association reviews each individual case and advises the carrier on the action to be taken, including not only the defense but also as to the payment in the event of liability. Some 200 hospitals in California participate in this program.

This joint coverage insures that the individual physician is represented by qualified counsel and the hospital medical staff as an agency of the hospital is also represented.

The fact that the members of the medical staff of several California hospitals have been sued recently should be warning enough to the prudent physician to obtain insurance protection No suit to date has been successful, but each one has occasioned a prolonged and expensive defense.

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

A **National Institute of Mental Health Grant** totaling $162,655 for the training of psychiatric residents for the next five years has been awarded to Herrick Memorial Hospital. Approved by the U. S. Department of Health, Education and Welfare, the psychiatric residency program has already received $125,000 during the past four years.

The hospital also supports a psychiatric out-patient clinic. During 1960, patients made 2,928 visits to the psychiatric clinic. Through the clinic the patients and their families received care from a social worker and psychologist as well as their psychiatrist. The psychiatric residents offer care on a 24-hour basis to patients hospitalized in the 49-bed psychiatric unit. Seven hundred and ninety patients received care and were discharged from the inpatient unit in 1960.

* * *

With the completion of acoustically controlled test rooms and installation of specially designed electronic equipment, the East Bay Rehabilitation Center at Herrick Memorial Hospital, Berkeley, reports it is now prepared to accept referrals for all types of diagnostic hearing evaluations for children and adults.

HUMBOLDT

Dr. Mildred Benjegerdes Hays, Eureka, received the honored Alumna Achievement Citation in special ceremonies held recently at Stephens College, Columbia, Mo.

Dr. Hays, a 1945 graduate, was honored for her work as a surgeon and as a diplomate of the American Board of Anesthesiology.

LOS ANGELES

Dr. George C. Griffith, professor of medicine and coordinator of cardiovascular teaching at the University of Southern California School of Medicine, has been elected to a four-year term on the council of directors of the Inter-American Society of Cardiology.

* * *

The Southern California Psychiatric Society, District Branch of the American Psychiatric Association, held its **annual meeting and installation of officers** on Saturday, April 29, 1961 at the Los Angeles County Medical Association building.

The principal speaker was Dr. Frank F. Tallman, professor of psychiatry at the U.C.L.A. School of Medicine. He spoke on his study of the teaching methods for nonpsychiatric physicians in the practice of psychosomatic medicine in Europe.

A scroll was presented to Dr. Daniel Blain, Director of the Department of Mental Hygiene, State of California, by the Society for his long record of outstanding contributions in the field of mental health. Dr. Blain, long an international figure in the field of psychiatry, had served for many years as the medical director of the American Psychiatric Association.

Dr. Ralph Bookman, Beverly Hills, was elected to the executive committee of the American Academy of Allergy at the group's 17th Annual Meeting held in Washington, D. C., in February.

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At the 1961 American Industrial Health Conference a scientific exhibit on "Vascular Disabilities in Industry," presented by **Dr. Albert Fields** of Los Angeles, was awarded third prize in the Scientific Section.

* * *

Dr. Paul A. L. Haber has been appointed Domiciliary Director at the Veterans Administration Center, Los Angeles. This is the first time that a physician has been appointed to this position.

SAN FRANCISCO

Dr. Frederick C. Cordes, San Francisco, is the winner of the 1960 Leslie Dana Gold Medal for meritorious work in the field of sight conservation and prevention of blindness.

The medal was presented to him on April 27, in St. Louis at a dinner sponsored jointly by the St. Louis Society for the Blind and the St. Louis Ophthalmological Society.

Dr. Cordes, chairman of the Department of Ophthalmology at California University Medical Center, was cited as "a leader in all phases of ophthalmology, including the prevention of blindness."

* * *

Hahnemann Hospital, in conjunction with Presbyterian Medical Center, has established a **clinic hospital urological specialty service** which was made possible through a grant by the Hahnemann board of directors. An approved urologic residency training program has been established at Hahnemann Hospital in affiliation with Presbyterian Medical Center, and hospital facilities are now available for the study and surgical treatment of all patients requiring urologic care. Patients who are eligible for clinic care are admitted either by the Presbyterian out-patient department or directly through the Hahnemann Hospital admission office. No charge is made for professional services, and hospital charges are based on individual social service evaluation. No restriction is placed on the geographical area from which patients may be received.

GENERAL

The California Society of Plastic Surgeons held its **eleventh annual meeting** at the Del Monte Lodge, Pebble Beach, California, on March 23, 24, 25, 1961. Approximately 160 members, guests and their wives attended.

The new officers elected for 1961-1962 are: President, Dr. Paul P. Pickering, San Diego; president-elect, Dr. Richard A. Shepard, Oakland; vice-president, Dr. Sanford R. Dietrich, Santa Barbara; secretary-treasurer, Dr. Jerome Klingbeil, Long Beach; historian, Dr. Paul J. Schneider, Oakland.

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An appeal for funds to repair serious fire damage that was done recently to Hacetteppe Children's Hospital at Ankara, Turkey, is being made in this country by Dr. Joe D. Wray, 1951 graduate of Stanford School of Medicine who for the past four years has been in Ankara, where he played a major role in the building of the hospital. Equipment valued at some $51,000 has to be replaced from foreign sources. Arrangements have been made for the organization CARE to serve as an agent to receive and transmit donations. CARE will segregate for this purpose any donations that are addressed: CARE, Hacetteppe Children's Hospital Fund, 600 First Street, New York 16, N. Y.

The Arthritis and Rheumatism Foundation is offering **predoctoral, postdoctoral and senior investigatorship awards** in the fundamental sciences related to arthritis for work beginning July 1, 1962. Deadline for applications is October 31, 1961. The awards are intended as fellowships to advance the training of young men and women of promise for an investigative or teaching career. They are not in the nature of a grant-in-aid in support of a research project.

The program provides for three awards:

1. Predoctoral Fellowships—limited to students who hold a bachelor's degree are tenable for one year, with prospect of renewal. Stipends range from $2,000 to $3,000 a year.
2. Postdoctoral Fellowships, limited to applicants with the degree of Doctor of Medicine, Doctor of Philosophy or their equivalent, are tenable for one year, with prospect of renewal. Stipends range from $5,000 to $7,000 a year.
3. Senior Investigator Awards, made to candidates holding or eligible for a "faculty rank" such as instructor or assistant professor (or equivalent) and who are sponsored by their institution. Stipends are from $7,000 to $10,000 a year and are tenable for five years.

Further information and application forms may be obtained from the Medical Director, Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, N. Y.

POSTGRADUATE
EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Management of Multiple Injury Patient—Harbor Hospital. Friday and Saturday, May 19 and 20. Thirteen hours. Fee: $55.00 (includes lunch and dinner).

Common Emergencies in Clinical Practice. Saturday and Sunday, May 27 and 28. Thirteen hours. Fee: $40.00.

Office Surgery. Saturday, June 17. Six hours lecture, four hours lab. Fee: Lecture and lab, $40.00; Lecture only, $25.00.

Dermatology in Clinical Practice. Monday and Tuesday evenings, 7:30 to 10:00 p.m., July 10 and 11. Fee: $25.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Thirteen hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead. Fee: $137.50.

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Advanced Seminars in Internal Medicine. Sunday through Wednesday, August 6 through 9. University Conference Center, Lake Arrowhead. Fee: $137.50 (includes room and meals).

Lower Extremities Prosthetics. Monday through Friday, September 25 through 29. Fee: $125.00.

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Diagnosis in Ophthalmology. Thursday through Saturday, June 1 through 3. Twenty-one hours. Fee: $60.00.

Proctology. Thursday and Friday, May 18 and 19. Fourteen hours. Fee: $50.00.

Recent Advances in Gastroenterology. Tuesday and Wednesday, May 2 and 3. Fourteen hours. Fee: $40.00.

Basic Electrocardiography for the General Physician. Friday and Saturday, June 9 and 10. Fourteen hours. Fee: $40.00.

Cerebral Palsy. Friday, June 30. Seven hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Conference on Strabismus. Wednesday through Friday, July 26 through 28. Limited enrollment. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

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*Fee to be announced.
†Hours and fees to be announced.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Recent Advances in Medicine. Thursday and Friday, November 9 and 10, Statler Hotel, Los Angeles.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Alumni Postgraduate Convention. March 13 through 15, 1962, Ambassador Hotel, Los Angeles. *Contact:* Kenneth H. Abbott, M.D.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Office of the Dean, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION
POSTGRADUATE INSTITUTE—1961

Sacramento Valley Counties, June 30 and July 1, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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AUDIO-DIGEST FOUNDATION

Audio-Digest Foundation, a nonprofit subsidiary of the California Medical Association, offers a subscription series of hour-long tape recordings condensing highlights of important literature and leading national meetings. Designed to be heard in the automobile, home, or office. Six different services are offered—General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, and Anesthesiology. Also, just compiled and released is a Catalog of Classics, offering panel discussions and symposia on specific subjects in all specialties.

Medical Dates Bulletin

MAY MEETINGS

Butte County Branch American Cancer Society Second Annual Northern California Cancer Conference. May 17, 8:30 a.m., Richardson Springs, near Chico. *Contact:* Mrs. Pat Tapp, secretary, 1376 E. 1st Ave., Chico.

Nevada Chapter American Academy of General Practice. May 18-20, Riverside Hotel, Reno, Nevada. *Contact:* John M. Watson, Secretary, 1845 Prater Way, Sparks, Nevada.

Medical Staff of Children's Hospital of the East Bay Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

California Heart Association Annual Meeting and Scientific Session. May 19 through 21, Disneyland Hotel, Anaheim. *Contact:* J. Keith Thwaites, Exec. Director 1370 Mission Street, San Francisco.

American Orthopaedic Association (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

American Urological Association, Inc. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

Memorial Hospital of Long Beach, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

SUMMER AND FALL MEETINGS

Sequoia Hospital Fourth Annual Symposium on "Man and His Environment" beginning at 8:30 a.m., June 3. *Contact:* Eldon E. Ellis, M.D., program chairman, Sequoia Hospital, Whipple and Alameda, Redwood City.

Los Angeles Academy of General Practice Symposium. Wednesday, June 7, 9:00 a.m. to 5:00 p.m., Statler Hotel, Los Angeles. *Contact:* Hammond S. Horton, M.D., 845 Foothill Boulevard, La Canada, California.

Western Branch, American Public Health Association Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

Nevada State Medical Association 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23-26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

St. John's Hospital Postgraduate Assembly. September 14 through 16. St. John's Hospital, 1328 22nd St., Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

Washington State Medical Association Annual Convention. September 17-20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

San Francisco Heart Association 31st Annual Postgraduate Symposium. September 27 through 29, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 259 Geary Street, San Francisco 2.

California Society of Internal Medicine Annual Meeting. September 29 through October 1. Hotel del Coronado, Coronado. *Contact:* Philip L. Pillsbury, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

Kaiser Foundation Hospitals in Northern California Fifth Annual Symposium on Immunology and Autoimmune Disease. October 6 and 7, Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., director of medical education, 280 West MacArthur Blvd., Oakland.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

LOS ANGELES COUNTY HEART ASSOCIATION Professional Symposium. October 11-12. 9 a.m.—5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 1961 Scientific Assembly. October 15-18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

ST. JUDE HOSPITAL POSTGRADUATE ASSEMBLY, Fullerton, October 22, all day beginning at 8:30 a.m. *Contact:* B. L. Tesman, M.D., St. Jude Hospital, Fullerton.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, INC., October 22 to 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

SAN DIEGO COUNTY HEART ASSOCIATION Eleventh Annual Symposium. San Diego Veterans War Memorial Building, October 27 and 28. *Contact:* O. M. Avison, executive director, 3545 Fourth Avenue, San Diego 3.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region Annual Basic Science Lecture. Statler Hilton, Los Angeles, November 1, 6:30 p.m. *Contact:* George C. Griffith, M.D., Governor, Box 25, 1200 North State Street, Los Angeles 33.

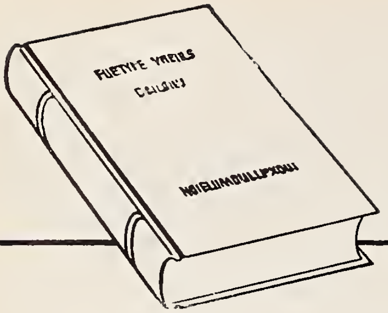
SAN DIEGO COUNTY GENERAL HOSPITAL Fifteenth Annual Postgraduate Assembly. November 1 and 2. No registration fee. *Contact:* David E. Wile, M.D., chairman, San Diego County General Hospital, San Diego.

LOS ANGELES PEDIATRIC SOCIETY (of Los Angeles County Medical Association) Annual Brennemann Lecture Series. Ambassador Hotel, Los Angeles, November 8 and 9. *Contact:* Neil N. Litman, M.D., vice-president, 9209 Sixth Avenue, Inglewood 4.

SAN DIEGO CHAPTER, CALIFORNIA ACADEMY OF GENERAL PRACTICE Fifth Annual Meeting. November 9 through 11, Riviera Hotel, Las Vegas. *Contact:* George H. Burkhart, M.D., 514 Third Ave., Chula Vista.

AMERICAN COLLEGE OF CHEST PHYSICIANS Seventh Annual Postgraduate Course on Diseases of the Chest, December 4 to 8, 9 to 5 daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.

WESTERN SURGICAL ASSOCIATION, November 29 through December 1, St. Francis Hotel, San Francisco. *Contact:* Walter W. Carroll, M.D., secretary, 700 N. Michigan Ave., Chicago 11.



THE PHYSICIAN'S Bookshelf

ROLE OF THE PHYSICIAN IN ENVIRONMENTAL PEDIATRICS—Carl C. Fischer, M.D., Professor and Head of the Department of Pediatrics, Hahnemann Medical College and Hospital; Director of the Health Service, Girard College, Philadelphia, Pa. Landsberger Medical Books, Inc., 51 East 42nd Street, New York, N. Y., 1960. 122 pages, $5.50.

This small book is a compilation of lectures to medical students. These lectures were designed to prepare the medical student for his practice if he intended in any way to deal with children. Yet the established physician can read with much satisfaction to himself, his patient and to society in general.

The text carries the reader from the first and older concepts of pediatrics to the modern or newer pediatrics which he describes as "Social Pediatrics." The challenge to the physician is not only that of his individual responsibility to the physical and emotional well being of his patient but more as to how the child fits into the modern complex society and community living.

Chapters with this perspective cover accidents, adoptions, the handicapped and the adolescent. The chapter on the school health program gives emphasis to the well known truism that if more of the required school examinations were made by the private physician and these more efficiently and more frequently than is the practice in most such programs, the general child health would be better.

The author concludes his text by a statement that if the pediatrician shall dedicate himself to the newer concept of pediatrics, his reward shall be great.

* * *

MANUAL FOR EXAMINATION OF PATIENTS—School of Medicine and North Carolina Memorial Hospital, The University of North Carolina, Chapel Hill, N. C.; Kerr L. White, M.D., Chairman; The Year Book Publishers, Inc., 200 East Illinois Street, Chicago 11, 1960. 231 pages, $4.50.

Although this little book is entitled a Manual for Examination of Patients, it not only describes interviewing, physical examination and principal laboratory procedures but also suggests a general philosophy of patient care. The product of an interdepartmental committee of the University of North Carolina School of Medicine, it represents the evolution of a mimeographed text designed to satisfy what the authors felt were two unmet needs in the standard text books of physical diagnosis. These were (1) a paucity of material on interviewing and history-taking, (2) integration of existing knowledge in psychiatry, preventive medicine and the behavioral sciences into a student's habits and methods.

At its present stage this is a fairly authoritative, as well as didactic manual, although it disclaims being either. The outline for the history is lengthy and detailed. There is an emphasis on social and economic factors. The section on physical examination is comparatively short except for certain specialist examinations such as neurologic and orthopedic.

Essentially this book is intended as a filler for existing texts on physical diagnosis. It emphasizes certain selected items in great detail and leaves out others of equal importance. It is the sort of book which can serve well in the institution of the authors but needs to be more complete before it can be recommended for general circulation.

Edgar Wayburn, M.D.

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SEA WITHIN—The Story of Our Body Fluid—William D. Snively, Jr., M.D., Lecturer in Pediatrics, University of Louisville School of Medicine; Attending Physician, Evansville Child Health Conferences; Medical Department, Mead Johnson & Company. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1960. 150 pages, $3.95.

James L. Gamble, founder of the modern study of electrolytes said, "Before our extremely remote ancestors could come ashore to enjoy their Eocene Eden or their Paleozoic Palm Beach, it was necessary for them to establish an enclosed aqueous medium which would carry on the role of sea water." The great importance of our body fluids and their relationship to their distant ancestor, the sea, are the major concerns of this small volume.

It is the story of the chemistry and physiology of the body fluids, done for the layman and the ancillary medical worker. The concepts are presented simply, usually by analogy and illustration. Most of the analogies are good, although occasionally they become more cute than educational—for instance, Chapter 9, entitled "The Seal of Death," which discusses diseases of volume deficit and of volume excess.

Although intended primarily for the layman this book can be of interest—and is well recommended—to the large numbers of physicians among us who are still perplexed by the intricacies of the facts about the body fluids.

Edgar Wayburn, M.D.

* * *

DIVERTICULITIS—Sara M. Jordan, M.D., Founder and Former Head of the Department of Gastroenterology, The Lahey Clinic; member of the Staff, New England Baptist Hospital, and New England Deaconess Hospital, Boston, Massachusetts; and Russell S. Boles, Jr., M.D., Member of the staff, Department of Gastroenterology, The Lahey Clinic; New England Baptist Hospital, and New England Deaconess Hospital, Boston, Massachusetts. Modern Medical Monographs 21—Irving S. Wright, M.D., Editor in Chief, and Richard H. Orr, M.D., Consulting Editor. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 90 pages, $4.75.

This 82-page monograph is the last undertaking of Sara Jordan, finished by her collaborator, Russell Boles, Jr. It is a succinct and critical review of the history of diverticulosis and diverticulitis followed by a discussion of the subject based on the authors' broad experience with colon disorders.

The diagnosis and treatment of diverticulosis and diverticulitis and their complications are discussed at some length. The indications for surgical intervention are presented but the details of surgical techniques are omitted.

This is recommended reading for anyone interested in the subject.

Edgar Wayburn, M.D.

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Millions Spent for Cold Remedies That Do Not Cure Colds

Cold remedies relieve Americans of millions of dollars each year but they do not cure or prevent colds, according to a publication of the American Medical Association.

"No cold remedy can do anything more than provide temporary relief of certain cold symptoms," an article in *Today's Health* said.

"Many do not even relieve symptoms effectively. Hence, they do little more than subtract from your pocketbook and add to the feeling that you've done something."

There is no known drug which will cure a cold, one reason being that not all the viruses which cause the ailment have been found, the article said. Another reason is that no one has discovered an antibiotic that kills viruses as they do bacteria, it added.

"In the best scientific opinion today, a cold is a nose and throat infection that lasts about a week and is caused by an unknown number of viruses," it said. "To date, at least six of these viruses have been isolated."

When all the viruses have been found, it said, it may be possible to produce a preventive cold vaccine.

"The cold remedy racket owes much of its success to the fact that the cold is a self-limiting disease," the article said.

In other words, the symptoms will disappear naturally in a matter of days whether medicine is taken or not.

Nevertheless, Americans spent $309,350,000 for package cold and cough medicine off the drugstore shelf in 1959, according to one estimate.

The article offered the following advice on what to do when you catch cold:

—Stay at home and take other precautions to prevent spreading the virus to others.

—Go to bed and rest, keep covered, and avoid drafts.

—Eat an adequate, well-rounded diet and drink plenty of fluids.

—Blow your nose gently when necessary.

—Use steam from a kettle or vaporizer to relieve nasal congestion.

—If your cold persists for more than a week, if you have more than one degree of fever for more than a day, or if you get more than three or four colds a year, see your physician.

The article was written by Theodore Berland.

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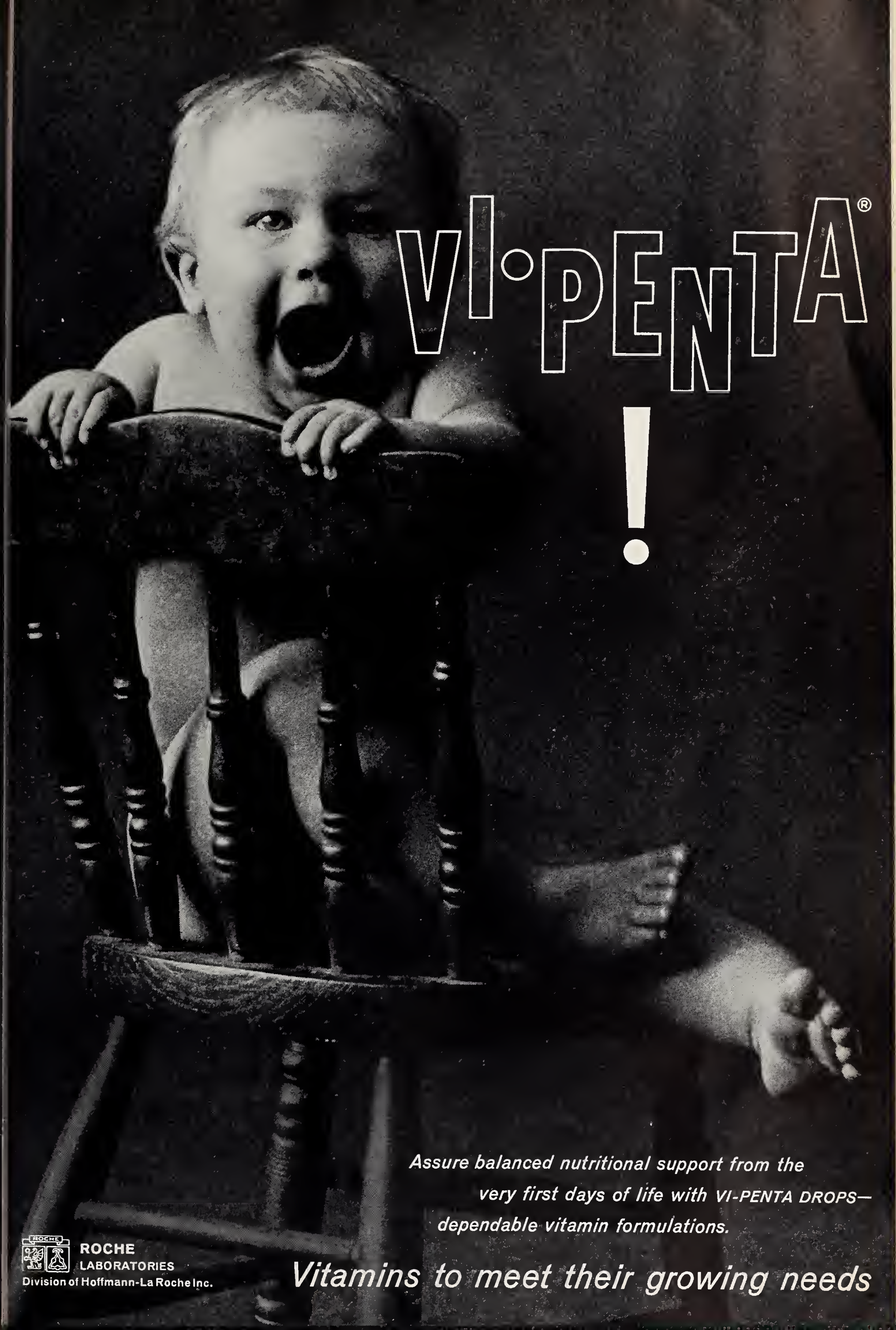

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Serious Frostbite Less Prevalent Among Acclimatized Rabbits

An experiment with rabbits has shown that serious frostbite is less prevalent among rabbits acclimatized to cold than those which are not.

The study was reported by Drs. Jun-Iche Shikata, Harris B. Shumacker Jr., and Franklin D. Nash, Indiana University Medical Center, in the November *Archives of Surgery*, published by the American Medical Association.

From simple observation of human beings who work in very cold temperatures, it appears that they can handle with their bare hands extremely cold objects without evidence of the local cold injury that might be expected in nonacclimatized subjects, the researchers said. Their study was undertaken to learn whether cold-acclimatization would have any effect on a local cold injury in animals.

Thirty rabbits, which had been kept in a temperature of about 20 degrees Fahrenheit for a period of 50 days, were compared with 30 nonacclimatized rabbits in an experiment in which a foot of each anesthetized animal was exposed to freezing.

The results showed that 57 per cent of the acclimatized rabbits escaped with trivial frostbite while only 10 per cent of non-acclimatized animals avoided serious injury.

Although the experiment did not produce an explanation for the phenomenon, the authors said, it did seem to demonstrate that acclimatization enables rabbits to withstand better a cold injury to the foot.

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Trampoline Acrobatics Can Cripple or Kill

(Continued from Page 42)

for children who may not appreciate the risks involved.

"If these suggested regulations were carried out by the many supervisors of trampoline centers, trampolines could become an excellent and safe means of enticing the normally indolent American into healthful exercise," the *J.A.M.A.* editorial said.

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International Cardiology Prize To Be Given in Italy

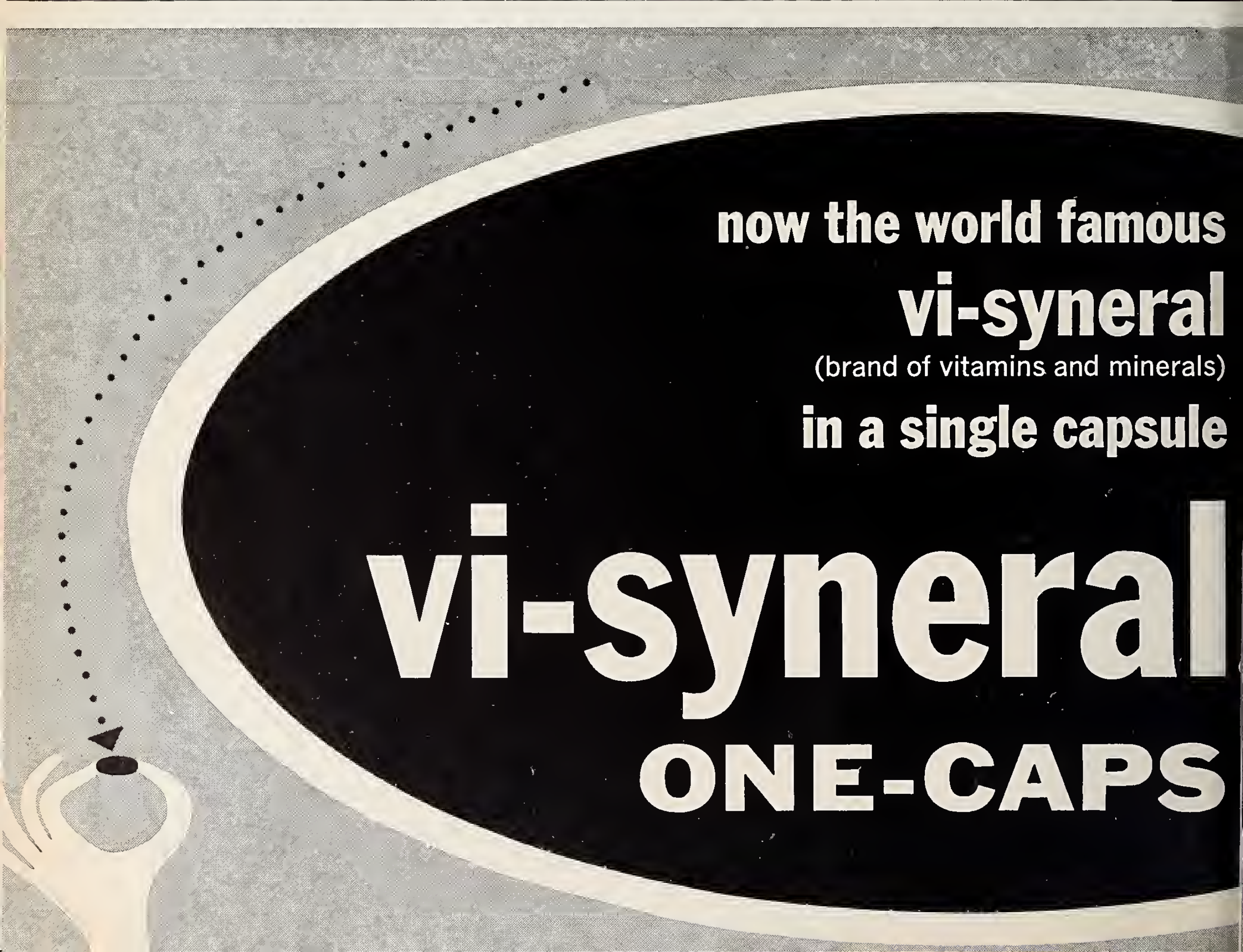
The Municipal Council of San Remo, Italy, are inaugurating this year the International Cardiology Prize with the object of encouraging and recognizing the progress which medical science has attained in this branch, which is so closely linked to the climatic and therapeutic conditions of the City.

The Prize, which is valued at 10,000,000 Lire (about $16,000) is of international importance, and will be awarded in San Remo on June 23, 1961. This Prize will be given on the occasion of the First Centenary of Italian Unity, and will be awarded at the inaugural sitting of the National Congress of the Italian Cardiology Society at the close of the International Medical Day in Turin, Italy.

The Prize will be awarded to the Scientist, Italian or Foreign, who has made the most notable contribution to world progress in the study of cardiology. With this object in mind, the Mayor of San Remo has appointed an International Commission who will decide who will receive the Prize.

The Commission is composed of G. C. Dogliotti, President; L. Condorelli, L. Antognetti, I. Chavez, J. Lenegre, E. Bedford-Wolheim.

Physicians wishing to compete should contact Franco Fusaro, Mayor of San Remo, Italy.



Total Body Cooling Stops Massive Stomach Bleeding

General body cooling has been tried for the first time in stopping massive bleeding in the stomach and intestinal area and found successful, two Connecticut surgeons reported recently.

Drs. George F. Gowen and W. W. Lindenmuth, West Haven, Conn., describe three cases in which massive hemorrhages were controlled by the method in the *Journal of the American Medical Association.*

"Although general hypothermia [an abnormally low body temperature] has not been used previously for patients with massive gastrointestinal hemorrhage, the background of experience in other conditions gave evidence for its use," the authors said.

The severity of the bleeding may be judged from the fact that 62 pints of blood were replaced in one patient before hypothermia, 33 pints in another, and 14 pints in the third, they said.

Ice bags were applied to lower the patients' temperature to 87.8 degrees Fahrenheit, about 10 degrees lower than the normal body temperature. The duration of hypothermia varied.

"The exact mechanism by which gastrointestinal hemorrhage was controlled in these patients is not known, but the prompt improvement seems more than coincidental," they said. "Certainly in the poor-risk patient with massive uncontrolled hemorrhage, total body hypothermia would warrant further evaluation."

In each of the three cases, they pointed out, "operative intervention was clearly inadvisable."

There was no recurrence of the bleeding, the authors added, although one of the three patients died later.

Since the article was written, the surgeons said, they had used the method for three other patients. The bleeding also was arrested in these three, although it recurred in one and all subsequently died, they said.

The two surgeons are associated with Yale University School of Medicine and Veterans Administration Hospital.

New Wrinkle in Baby Food Gets Medical Approval

Concentrated dry frozen baby food has received the approval of three medical researchers reporting in a publication of the American Medical Association.

Drs. Gerard J. Van Leeuwen, Emily J. Guyer, and Robert L. Jackson, Department of Pediatrics, University of Missouri School of Medicine, Columbia, Mo., reported in the *American Journal of Diseases*

(Continued on Page 66)

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New Wrinkle in Baby Food Gets Medical Approval

(Continued from Page 65)

of Children on a study in which a variety of the frozen concentrated foods were fed to 49 infants.

"The food was accepted by all infants in the study and was preferred by mothers who had had experience with other strained foods," they said.

"None of the infants developed diarrhea, constipation, or allergic manifestations as a result of ingestion of the food.

"Without exception, all the mothers stated that this new baby food appeared fresher and more appetizing. All preferred this new product with respect to ease of preparation and storage. Most mothers agreed that the small packages of frozen foods allowed them to feed a greater variety of foods to their babies."

The babies were started on the frozen foods at four months. A complete physical examination was done at monthly intervals. The infants' growth was charted and compared favorably with the norm.

Three infants born prematurely also were given the frozen foods and their growth was satisfactory.

At six months, most of the infants were taking about 1½ units of the frozen food, the equivalent of 8 to 12 ounces of strained foods, the authors said.

The processing by which these foods are prepared include the limited application of heat, reduction of moisture, and freezing, the researchers explained. No added colors, flavors, preservatives, or fortifying nutrients are used in the process, they added.

Studies conducted at the Wisconsin Alumni Research Foundation indicated that nutrients were effectively retained in processing and in storage at freezing temperatures, the authors also reported.

Bacteriologic studies were conducted at the University of Chicago and no food poisoning organisms were found in any of the specimens studied, they said. This study, conducted by Dr. Gail Dack, also showed that the frozen food could be stored safely in a deep freeze for about one year and in a refrigerator for one month, they said.

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Oral Therapy Extended To Many Diabetics

A combination of two drugs can extend oral therapy to "a sizable group" of diabetic patients, was reported in a study by Drs. Roger H. Unger, Leonard L. Madison, and Norman W. Carter, Dallas, Tex., in the *Journal of the American Medical Association.*

The two drugs, tolbutamide and phenformin, previously have been used singly. They were administered in combination to 80 patients in whom the disease could not be wholly controlled with tolbutamide alone. Significant improvement was obtained in 70 per cent without causing any serious side effects.

Diabetes is a disorder in which the body cannot utilize sugar normally, causing an excess to accumulate. Tolbutamide, taken by mouth, is the most widely used drug to reduce the level of sugar in the blood. However, in some patients the drug cannot reduce the blood sugar level to normal and in others it cannot reduce the level at all.

The 80 patients in the Dallas study were either totally or partially unresponsive to tolbutamide.

The authors attributed the success of the treatment to "the combination of drugs rather than phenformin alone."

The tolbutamide-phenformin combination "is clearly the most potent of the oral regimens" for those patients imperfectly controlled by tolbutamide alone, they said. This is "a group thought to make up a considerable proportion" of those with the adult form of diabetes, they added.

"Oral therapy can, therefore, be extended to include a sizable group of previously ineligible patients," they said.

Regarding side reactions, the authors said, this therapy has not been associated with evidence of liver, kidney, nervous, or skin disorders. They reported some gastrointestinal side effects which were unpleasant but not of a serious nature.

"Tolbutamide is the drug of choice in tolbutamide-responsive diabetes; tolbutamide-phenformin combination therapy appears to be an effective and relatively safe method of treating tolbutamide-hyporesponsive and unresponsive [adult] . . . diabetes," they concluded.

Dr. Samuel B. Beaser, Boston, who made the first report in this country in 1958 on the combination therapy, reported on a similar study in the same *Journal.*

His study showed that a combination of phenformin and either tolbutamide or chlorpropamide, which is similar to tolbutamide, was successful in reducing blood sugar in 19 of 25 diabetics. These patients had failed to respond fully to treatment with either tolbutamide or chlorpropamide alone.

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Anticoagulants Prevent Some Strokes

Many persons who suffer temporary "warning" strokes can be spared a full-blown and possibly fatal stroke, a study indicated recently.

The findings support the view that long-term anticoagulant therapy affords protection from strokes to a significant percentage of patients who suffer intermittent attacks, according to three Mayo Clinic researchers.

Drs. Robert G. Siekert, Clark H. Millikan, and Jack P. Whisnant, Rochester, Minn., reported results of a study involving 230 patients in the *Journal of the American Medical Association.*

The patients were studied for periods of one to five years.

The incidence of strokes among 115 patients who received anticoagulant drugs continuously was 4 per cent, compared with an incidence of 40 per cent among 40 patients who did not receive this treatment.

Among the treated group, 83 per cent escaped a stroke while only 50 per cent of the untreated patients escaped.

Simplified Fluid Replacement For Burn Victims

A simplified method of replacing fluids lost by persons who suffer extensive burns has been tested successfully, according to an article in the November 19 *Journal of the American Medical Association.*

Drs. J. Frederick Eagle Jr., New York City, and Worthington G. Schenck Jr. and Walton Shim, Buffalo, N. Y., said a single formula providing for replacement of water, protein, and electrolytes had proved successful when given intravenously during the first 48 hours after the burn was suffered.

These three substances and red blood cells usually are administered in four different solutions one after the other. The authors said they found whole blood rarely has been necessary during the first 48 hours.

The combined solution has been used exclusively for fluid replacement in all burned patients admitted to Meyer Memorial Hospital, Buffalo, for the past six years and at St. Luke's Hospital, New York, for the past four years, the authors reported.

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Experience with 28 patients with burns of 15 per cent or more of the body indicates that the combined formula does not influence over-all mortality, they said, but apparently does reduce deaths during the first 48 hours.

"Simplicity of management is the greatest asset of this regimen," they said. "It should be particularly valuable in disasters where the help of inexperienced personnel must be utilized."

Another advantage, they said, is the fact that water, salt, and protein can be replaced continually in about the same proportions and at the same rate at which they are being lost.

Only the rate of administration must be changed to accommodate the size of the patient and the extent of the burn, they said.

Malignant Tumor Not A Hopeless Disease

Malignant tumor, a rare form of cancer, is "not a hopeless disease," according to an editorial in the *Journal of the American Medical Association.*

The editorial and two accompanying articles seek to dispel a commonly-held belief that the disease is "the most lethal of cancers in man."

It is "probably no better or no worse" than any other cancer, the editorial said.

This type of cancer usually develops from a mole and has a tendency to spread.

"When malignant degeneration begins, sufficient time remains in the majority of cases to act quickly and effectively," the editorial said.

The rate of survival may be as high as 20 per cent after 10 years, it said.

In a series of 130 cases at Ohio State University Medical Center from 1947 through 1957, the survival rate was 32 per cent for 5 years and 19 per cent for 10 years. In 120 of the cases, surgery was the method of treatment.

Dr. Arthur G. James, Columbus, Ohio, said the figures indicate "this disease should not maintain its past reputation as one of the most lethal cancers in man."

"The curative possibilities are definite," he said. "Also . . . the patient can be offered good and often long-term palliation."

In another article, Dr. Gordon McNeer, New York City, discussed the history and behavior of malignant tumor and concluded that "cure of this disease may be attained in a high percentage of patients in whom the disease is confined to one anatomic site."

When the disease is limited to the primary site, five-year survival free of cancer is attained in 40 per cent of the cases, he said.

When the disease has spread, he said, "the outlook becomes considerably less favorable, although not hopeless."

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17. Lorber, S. H., and Shay, H.: Fed. Proc. *12*:90, 1953. 18. Johnston, R. I.: J. Indiana M. A. *46*:869, 1953. 19. Marien, B., Webster, D. R., and Tidmarsh, C. J.: Gastroenterology *24*:200, 1953. 20. Hardin, J. H., Levy, J. S., and Seager, L.: South. M. J. *47*:1190, 1954. 21. Sleisenger, M. H., Eisenbud, M., and Almy, T. P.: Gastroenterology *27*:829, 1954. 22. Weiss, S.: Am. J. Gastroenterology *23*:69 (Editorial) 1955. 23. Illingworth, R. S.: Lancet *2*:1119, 1959. 24. McHardy, G. G., and Browne, D. C.: South. M. J. *45*:1139, 1952. 25. Miller, B. N.: J. South Carolina, M. A. *48*:1, 1952.

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Oxygen Rated Important Antidote In Cyanide Poisoning

Oxygen is "a specific antidote" in cyanide poisoning, Dr. Constantin Cope, Memphis, Tenn., said recently.

Dr. Cope presented evidence that "oxygen exerts a protective effect on cyanide toxicity" in an article appearing in the *Journal of the American Medical Association*.

The exact biochemical mechanism is not known, he said, but increased oxygen tension in the arterial blood stream in some way blocks the cyanide effect.

As long as the oxygen tension of the body is adequate, he said, the toxic effect of cyanide is usually reversible.

A person with a lung ailment producing a lower than normal arterial oxygen tension is more vulnerable to cyanide poisoning, he said. Similarly, he said, a person with coronary heart disease or cerebral artery disease may have borderline oxygen tension.

"Under these conditions, cyanide opposed by a low oxygen pressure probably can kill quickly—certainly before any therapy can be given," he said.

"It is, therefore, logical to recommend that only young healthy workers under 40 years of age be employed in those areas of industry in which accidental cyanide poisoning may be a hazard. Anyone aged over 40 with any sign of cardiorespiratory insufficiency should be restricted from working in such places."

Oxygen, as well as suitable drugs, should be available for immediate use in cases of accidental poisoning, he said.

The most vital steps in the treatment of cyanide poisoning, Dr. Cope concluded, are artificial respiration, if necessary; inhalation of pure oxygen, and the maintenance of a normal blood pressure. Drug therapy shortens the course of intoxication, he said, and is life-saving when the poison is taken by mouth.

A.M.A. Reiterates Belief in Effectiveness of Salk Shots

The Council on Drugs of the American Medical Association recently reiterated its belief in the effectiveness of the Salk polio vaccine.

The Salk vaccine "is now well established as one of the most effective vaccines of any kind presently available," the council said in a statement in the (April 22) *Journal of the American Medical Association*.

The council urged the vaccination of every unvaccinated person with Salk shots, especially those under 40 years of age.

The statement included the following findings of a special committee on poliovirus vaccines of the

(Continued on Page 15)

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A.M.A. Reiterates Belief in Effectiveness of Salk Shots

(Continued from Page 12)

council, which recently reviewed past experience with the Salk vaccine in the United States and other countries:

—Salk vaccine repeatedly was found to be at least 80 per cent effective when three or more doses were given. With one exception, studies of polio outbreaks revealed that the disease occurred primarily in the unvaccinated. The only significant exception, an outbreak in Massachusetts, apparently could be correlated with an exceptionally widespread use of Salk vaccine in Massachusetts in 1956 at the time when the potency of the vaccine was lowest.

—The potency of the vaccine has been rising steadily for the past two years; therefore, the relatively unsatisfactory results which have sometimes appeared in the past need no longer be expected.

—Effectiveness similar to that reported in the United States has been observed in a number of other major countries in which it has been used, in which 75 to 95 per cent protection has been reported, according to the latest report of the World Health Organization.

"The live poliovirus vaccine is now under study, but the fact that this vaccine will not be available for use in 1961 emphasizes the need for utilization of the Salk vaccine," the statement concluded.

The A.M.A. last month joined forces with the U. S. Public Health Service and the National Foundation in a campaign to get the unvaccinated 40 per cent of the nation's population inoculated this spring.

Mondor's Disease: A Review of Seven Cases—C. Honig and R. Rado. Ann. Surg.—Vol. 153:589 (April) 1961

Seven cases of Mondor's Disease are reviewed, seen over 8-year period in surgical practice. Literature reviewed, only one series larger. Suggests disease is not rare but must be recognized. History, clinical course, pathology of disease are presented. Disease is superficial phlebitis of chest wall, occurs in two-thirds female, in one-third male, ages 21 to 55; onset is insidious and course is benign. Etiology: operative trauma, trauma, post partum. No treatment is necessary. Confusion with breast cancer makes diagnosis important. Reassurance of patient is most important.

* * *

Suction for Postoperative Wounds—W. T. Sutton and E. F. Scanlon. Arch. Surg.—Vol. 82:569 (April) 1961

The accumulation of fluid in the upper arm when the conventional form of suction wound dressing was used for radical mastectomy wounds led the authors to place a T tube beneath the lateral skin flap, one limb of which paralleled the axillary vein. The possibility of damage to the vein on removal of the T tube with the suction intact was determined by a study of the effect of identical suction upon dissected cadaver axillary veins and upon iliac veins in live mongrel dogs. The results of the study indicated that the wound suction as used clinically by the authors is quite safe and with certain modifications can be used very effectively with those difficult wounds which have skin flaps and split-thickness grafts.

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Live Polio Vaccine Effective In First U. S. Community Use

The first use of the Sabin oral live poliovirus vaccine in a community-wide immunization program in this country recently was termed "highly effective."

A report on the project was made by Dr. Albert B. Sabin, Cincinnati, the vaccine developer, and five associates in the (May) *American Journal of Diseases of Children*, published by the American Medical Association.

A total of 181,784 persons in Cincinnati and adjacent Hamilton County were vaccinated during the program which began in late April 1960.

"With the exception of a single imported case in September, there were no cases of poliomyelitis either in the city or the surrounding county with a total population of about 940,000, thus achieving the objective of the vaccination program," the report said.

"The results obtained in Cincinnati in 1960, as well as those being reported from central and eastern European countries where community-wide programs of oral vaccination were carried out in 1960, indicate that in oral poliomyelitis vaccine we now have a simple tool with which the complete elimination of poliomyelitis can be attempted."

The vaccine was administered in a teaspoonful of syrup. Each person received three doses, one for each of the three types of polioviruses.

"There were no untoward reactions to the vaccine," the authors said.

Most preschool children, some of the adults, and a small number of school-age children received all three doses by the end of June. Most of the school children received their final two doses in November 1960 and January 1961. The first dose contained attenuated Type I poliovirus. The Type I virus causes 85 to 90 per cent of paralytic polio.

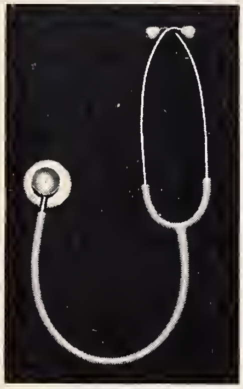
School children were vaccinated during a brief recess at school. Preschool children were vaccinated through the cooperation of 265 physicians whose offices were used as centers for the program.

The Cincinnati test provided additional evidence of the harmlessness of the spread of polioviruses after they are introduced en masse in the community, the report said.

"The initial extensive dissemination of polioviruses, and consequent immunization by contact of a large number of those that did not receive the oral vaccine, was self-limited, so that at the end of September neither Type I nor Type III poliovirus was detected among vaccinated or unvaccinated children, and Type II only rarely," it said.

"It is evident that dissemination of the polioviruses was halted at a time of year that was most conducive to the spread of enteric [intestinal] viruses."

(Continued on Page 22)



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Surgery of Hernia	Three Days, June 22 and October 12
Basic Principles in General Surgery	Two Weeks, October 16
Surgical Board Review, Part I	Two Weeks, November 6
Surgical Board Review, Part II	Two Weeks, November 27
General Surgery	One Week, September 18
Hand Surgery	One Week, September 25
Gynecology, Office & Operative	Two Weeks, September 18
Vaginal Approach to Pelvic Surgery	One Week, June 26
Obstetrics, General & Surgical	Two Weeks, October 9
Basic Electrocardiography	One Week, October 2
Basic Internal Medicine	Two Weeks, October 16
Fractures & Traumatic Surgery	Two Weeks, October 23
Thoracic Surgery	One Week, October 16
Blood Vessel Surgery	One Week, November 13
Urology	Two Weeks, October 23

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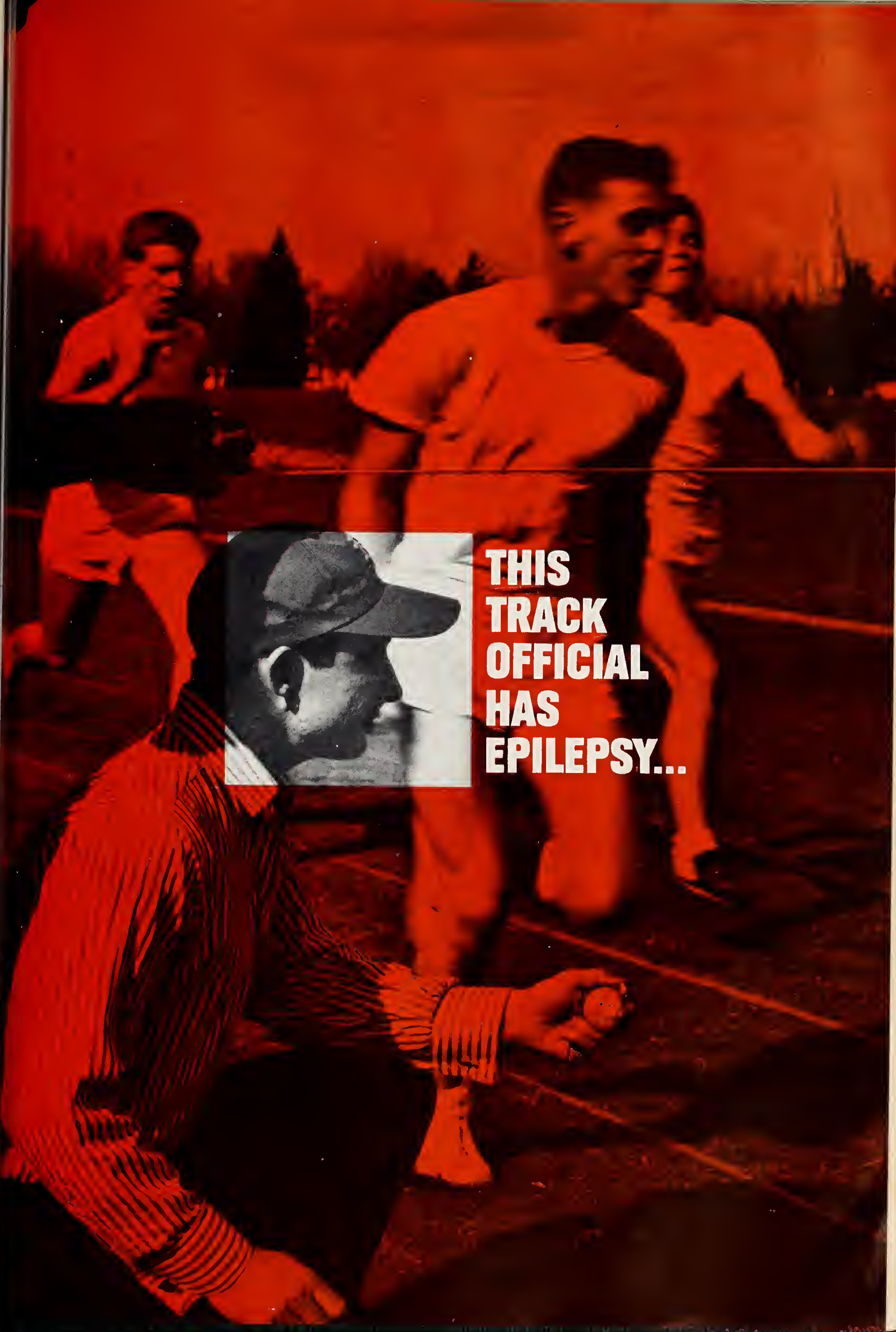
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Most Heart Victims Can Lead Productive Lives

The vast majority of persons with heart disorders can be returned to happy, productive lives.

Writing in the *Journal of the American Medical Association,* Dr. Louis B. Newman, Chicago, said progress in education of the public and advances in medical research have made rehabilitation possible but anxiety still is a hindrance.

"Even though most persons with heart disorders are willing and able to work, many are unemployed —not on account of their heart disease, per se, but as a result of apprehension, anxiety, and fear brought about by ill-advised, unnecessary activity restriction, misunderstanding, and lack of orientation regarding their disease," he said.

"Whether at home or on the job, there must be a safe activity level for the patient.

"Special concessions or sympathy should have no place in the life of the cardiac patient. The proper occupational activity in most cases will not lead to progression of the heart disease or deterioration of the work capabilities of the person. On the contrary, many of these individuals show improvement while in an employed status."

Dr. Newman is chief of the physical medicine and rehabilitation service, Veterans Administration Research Hospital.

Live Polio Vaccine Effective In First U. S. Community Use

(Continued from Page 16)

Since it was thought possible that the presence of other intestinal viruses might under certain conditions interfere with the desired immunity-reaction to the live polio vaccine, the researchers investigated the presence of other viruses in 1,000 children. They found a low incidence of other viruses and said it appeared under the conditions of the community-wide use of the oral vaccine even the small number of children infected with other viruses developed immunity to polioviruses.

The authors suggested a two-phase program for eliminating polio throughout the nation as soon as the live vaccine becomes available in sufficient quantity.

The first phase called for community-wide vaccination during the winter and spring of the largest possible number of persons, regardless of prior Salk shots, with special emphasis on preschool children, the most important spreaders of polioviruses. The second phase called for the continuing vaccination of all newborn children during the first year of life as part of their regular medical care.

The authors also commented that there would be no scientific need for the Salk killed-virus vaccine when enough live vaccine is available for everyone.

Co-authors of the report are Richard H. Michaels, M.D.; Ilya Spigland, M.D.; William Pelon, Ph.D.; John S. Rhim, M.D., and R. Eugene Wehr, M.D.

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Electrical Factors Blamed In Study of Heart Attacks

Fatal heart attacks can occur in the absence of any new heart damage, a study indicated recently.

An autopsy analysis of 500 sudden deaths attributed to hardening of the coronary arteries revealed that 63 per cent of the victims had hearts with no acute anatomical damage, according to an article in the *Journal of the American Medical Association.*

The findings cannot be applied to the general population because the study group was weighed in favor of young persons and those not under regular medical observation.

Signs of recent heart attacks could explain 184 of the fatalities, or 37 per cent, but in the remaining 316 persons there was no evidence of recent heart damage, Drs. Lester Adelson and William Hoffman, Cleveland, reported.

Although chronic coronary disease was found among the latter group, they said, many of these persons had recovered from a heart attack in the past. Furthermore, no recent or remote heart attacks were found in 26 per cent of the 500, they said.

A plausible explanation for fatal heart attacks in such persons is the theory that an electrical imbalance can arise from the slow progressive narrowing of the coronary arteries which nourish the heart, they said.

Varying degrees of coronary narrowing produce different amounts of oxygen in different parts of the heart muscle, they said, and this can create an electrical disturbance of sufficient magnitude to cause a fatal convulsive heart beat.

Such electrical phenomena do not produce any recognizable damage to the heart muscle, they added.

The fatal attacks occurred in all environments. Fifty-five per cent of the victims were stricken at home.

Thirty-seven persons were operating motor vehicles at the onset of their attack, the authors pointed out.

(Continued on Page 26)

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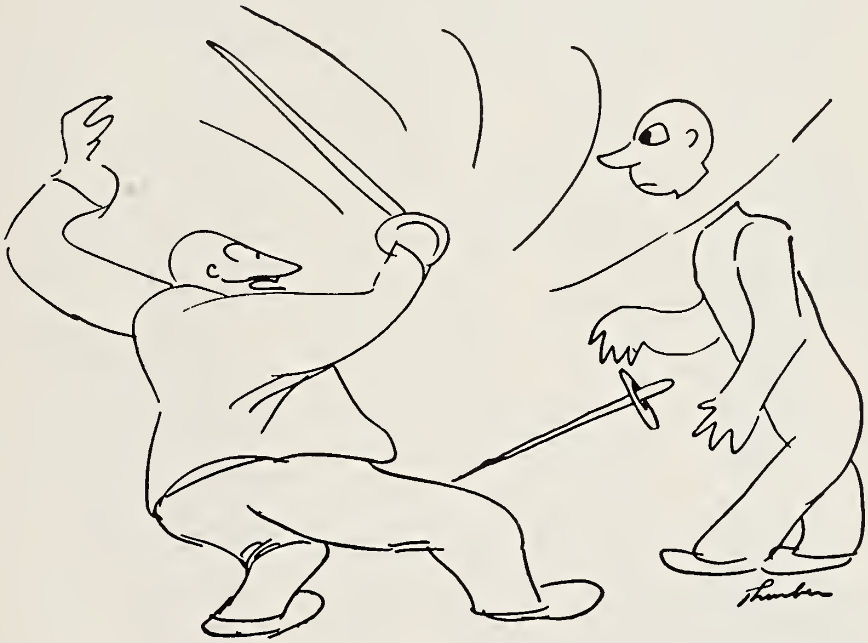

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Ultrasonic Waves Satisfactory In Treating Ear Ailment

Treatment of the chronic ear ailment known as Meniere's disease with ultrasonic waves has produced satisfactory results.

Ultrasound probably will replace currently used surgical methods in many persons because, unlike these procedures, ultrasound does not cause any hearing loss, Dr. Franz Altmann, New York City, said in the (April 22) *Journal of the American Medical Association.*

The disease, usually caused by a malfunction of the inner ear, is characterized by fluctuating hearing ability, noises in the ear, and vertigo, the sensation that the world outside oneself is spinning around.

Results obtained in 60 patients treated with ultrasonic waves were "quite satisfactory," Dr. Altmann said.

Attacks of vertigo were eventually completely eliminated in about 80 per cent of the cases, he said. However, in some instances, he said, the treatment had to be repeated because of a recurrence.

In the majority of persons this disease can be controlled with drugs, Dr. Altmann said. Until recently, he said, when drugs failed the primary method of eliminating vertigo had been destruction of the inner ear by surgical techniques, with resultant loss of hearing.

By use of ultrasonic waves, he said, destruction of the inner ear can be achieved while the hearing remains unchanged and continues to fluctuate or might even get slightly better.

The noise in the ear often becomes less intense, he said, but, as in surgical destruction of the inner ear, it disappears in only a few cases.

Ultrasonic waves are sound waves of such high frequency they are inaudible to the human ear. In the treatment of Meniere's disease a special applicator is placed on the long lateral semicircular canal, which is exposed through an operation in the mastoid area behind the ear. This is done to prevent absorption of the sound waves by air or intervening matter.

Dr. Altmann is associated with the department of otolaryngology, Columbia University, College of Physicians and Surgeons.

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Electrical Factors Blamed In Study of Heart Attacks

(Continued from Page 24)

"Although several were able to stop uneventfully, many victims lost control of their vehicle, and it stopped only after it had run into a solid obstruction," they commented. "These incidents raise the issue of the physical, mental, and emotional stresses attendant on driving on today's highways and the problems of driver licensure."

The study also indicated that "obesity is not a significant factor in predisposing to sudden death from coronary disease," the authors said.

"However, it has been suggested that weight history may be more important than observed weight," they said. "Unfortunately we have no data about past weight changes of our coronary victims."

The findings indicated no apparent causal relationship between a heart attack and the type of activity preceding the fatal episode, they said.

In addition, they said, "the impression that coronary disease chooses its victims mainly from the executive or professional groups is not substantiated by our data."

The two physicians are associated with the Institute of Pathology, Western Reserve University School of Medicine.

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REFERENCES: 1. Kimmig, J.: Hautarzt 3:414 (Sept.) 1952. 2. Butler, P.G.: Western Med. 1:16 (Nov.) 1960. Bibliography on request.

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Psychological Tests Could Aid In Licensing Drivers

Psychological testing could help prevent the licensing of potentially unsafe drivers, according to four Los Angeles researchers.

They based their conclusion on the performances of 331 amateur sports car drivers in a study designed to assess factors that might affect the fitness of any motorist. Their study revealed a significant correlation between certain psychological traits and driving performance during races over courses similar to actual roads.

The report was made by John L. Benton, M.D.; Lloyd Mills, Jr., M.D.; Ken Hartman, M.A., and James T. Crow, B.A., Los Angeles, in the (May 6) *Journal of the American Medical Association.*

A psychological test given the drivers produced "definite indications" that those who commit the most errors reject social customs, are deficient in ethical awareness, like to take personal risks, and are prone to abstract thought, the authors said.

The study indicates the "great value of psychological testing in detecting potentially unsafe drivers," they said. "There is little question but that psychological testing, if properly applied, could be of major benefit in licensing drivers."

In contrast to the psychological findings, the study showed that physical characteristics, visual abilities, and reaction times had no significant effects on driving ability, race deportment, or involvement in accidents on the race course.

Experienced drivers were involved in accidents as frequently as inexperienced drivers although the experienced racers had superior ability and committed fewer errors. Race deportment, i.e., observing the rules, had more effect on the likelihood of an accident than either or experience, it was found.

Gallstones Not Related To Gallbladder Cancer

Cancer of the gallbladder is not related to the presence of gallstones, according to four researchers, writing in the (May 6) *Journal of the American Medical Association.*

They said the incidence of cancer in the presence of gallstones was only 1.2 per cent in a series of 1,396 patients whose gallbladders were removed. The incidence of cancer in the absence of gallstones was 2.2 per cent. The authors said "there is no significant statistical difference between the incidences with and without stones."

The incidence of cancer in the series was 1.4 per cent and the incidence of gallstones was 86.9 per cent.

Authors of the article are Herbert Derman, M.D.; David S. Gerbarg, M.D.; James H. Kelly, D.P.H.; Stephen Pauker and Jerome Singer, City of Kingston Laboratory, Kingston, N. Y.

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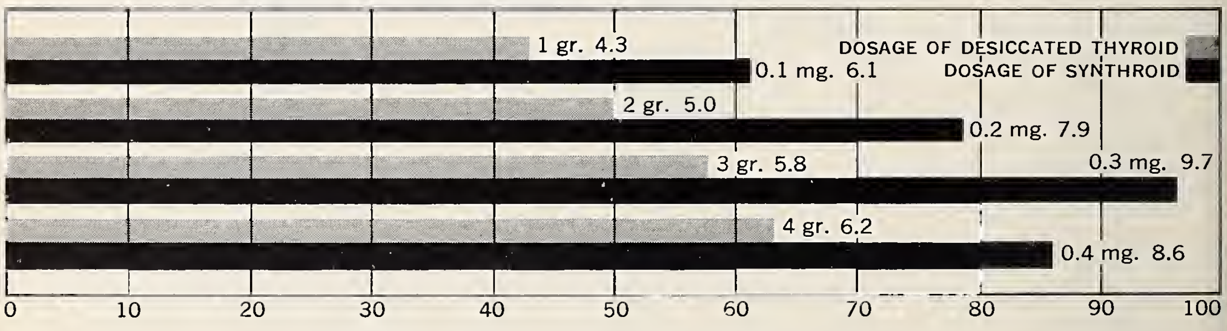

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†"Equivalent" dosage: 0.1 mg. of sodium l-thyroxine (SYNTHROID) is equivalent to 1 gr. desiccated thyroid. Reference: 1. Sturnick, M. I., and Lesses, M. F.: New England J. Med. **264**:608 (Mar. 23) 1961.

Schizophrenics Identified By Blood Chemistry

Schizophrenia can be identified in a significant number of cases on the basis of a blood test, six Detroit researchers reported recently.

Schizophrenia is a severe mental disorder and the most common form of mental illness. It involves a loss of contact with reality and disintegration of the personality.

Writing in the current *Archives of General Psychiatry*, published by the American Medical Association, the researchers said they had made studies which "demonstrated that schizophrenic patients could be differentiated from nonschizophrenic subjects biochemically in a significant number of cases."

The study lends support to previous reports implicating a blood factor as significant in producing a disturbance of the body's metabolism, or chemistry, in schizophrenia, the authors said.

The significance of the findings in the development of schizophrenia is not known, they said. The chemical differences found in schizophrenics may be purely a phenomenon secondary to a complex disease process, they said, but on the other hand, may represent an important factor associated with the symptoms of the illness itself.

Further investigations are under way to delineate the importance of these chemical factors in the schizophrenic process, they said. These include efforts to isolate the blood factor involved.

The same investigators confirmed results obtained with a group of schizophrenics at the Lafayette Clinic, Detroit, with a similar study of another group at the National Institute of Mental Health, Bethesda, Md.

Authors of the article are Charles E. Frohman, Ph.D.; Garfield Tourney, M.D.; Peter G. S. Beckett, M.D.; Helen Lees, Ph.D.; L. Kenneth Latham, and Jacques S. Gottlieb, M.D.

Hyperthyroidism Reported In Identical Twins

The rare occurrence of hyperthyroidism in identical twins was reported recently in the (April 29) *Journal of the American Medical Association.*

The twin brothers developed Grave's disease, in which overactivity of the thyroid gland produces a pop-eyed appearance, at the ages of 19 and 20 respectively, according to Dr. Jerold M. Lowenstein, San Francisco.

Only about a dozen or so similar occurrences have been reported previously, he said.

Although it has been recognized that there is often an hereditary predisposition to this disease, Dr. Lowenstein said, in this case there was no other family history of thyroid disease.

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M 57	1½	4	400	1.7	**0.15**	**8**	**290**	**4.4**	**29**
F 71	2-3	8	260	0.7	**0.2**	**10**	**200**	**7.0**	**11**
F 65	2-4	8	552	2.3	**0.2**	**8**	**299**	**4.5**	**9**
M 67	1-3	5	360	2.4	**0.2**	**6**	**230**	**6.0**	**12**
F 70	3-4	9	600	1.7	**0.2**	**4**	**340**	**6.6**	**4**
F 62	1-3	10	299	1.6	**0.1**	**8**	**164**	**3.9**	**3**
F 59	4	8	420	2.0	**0.2**	**3**	**215**	**7.0**	**5**

Precautions: As with other thyroid preparations, overdose may cause diarrhea or cramps, nervousness, tremors, tachycardia, insomnia, and continued weight loss. Medication, in such cases, should be stopped for 2-6 days, then resumed at a lower level.

Contraindications: Thyrotoxicosis, acute myocardial infarction.

For Hypothyroidism, these results strongly indicate **SYNTHROID®**
(brand of sodium l-thyroxine)

Reference: 2. Macgregor, A. G.: Lancet 1:329-332 (Feb. 11) 1961. *Brit. Pharmacopeia

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REFERENCES AND REVIEWS

A Ligature Introducer—N. F. Anderson. Lancet—Vol. 1:318 (Feb. 11) 1961

This ligature introducer is a thin tube with a spool-carrying drum mounted across one end and a curved, hollow needle on the other. Thread is led out from spool through tube and needle. The instrument has these advantages: (a) The thread is presented at the tip. (b) It is completely enclosed. (c) It passes through a small opening and can make its own tunnel. The length is 15 cm.

* * *

Pneumonia Caused by Nocardia Asteroides: A Case Report—C. F. Gutch. Nebraska Med.—Vol. 46:47 (Feb.) 1961

A 64-year-old man is reported who had confluent left upper lobe pneumonitis. Two weeks prior to admission he had had an upper respiratory infection and sore throat. Nocardia asteroides was repeatedly identified from sputum culture. There was an excellent response to sulfadiazone treatment as seen both clinically and roentgenologically. The treatment was arbitrarily continued for one year.

* * *

Inherited "Acquired" Hypogammaglobulinemia—F. Wollheim. Lancet—Vol. 1:316 (Feb. 11) 1961

Two male and five female patients with adult primary hypogammaglobulinemia were studied. They came from three different small geographic areas. One derived from a first-cousin marriage and two proved direct relationship. This disease being very rare, the evidence points strongly to autosomal recessive inheritance in at least some cases of "acquired" hypogammaglobulinemia.

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Human Serum Insulin-Like Activity as Determined by a Rat Adipose Tissue Bio-Assay Method—P. M. Beigelman. Diabetes—Vol. 10:130 (March-April) 1961

Normal human sera were assayed by the method utilizing glucose uptake by adipose tissue. Maximum insulin-like activity appeared to occur 1 to 2 hours postprandial. Considerable individual variation was a notable feature. Decrease of insulin-like activity was demonstrated as a consequence of diluting pooled whole serum.

* * *

Insulin Resistance with High Levels of Circulating Insulin-Like Activity Demonstrable in Vitro and in Vivo—J. C. Shipp, R. O. Russell, J. Steinke, M. L. Mitchell, and W. B. Hadley. Diabetes—Vol. 10:1 (Jan. Feb.) 1961

An instance of insulin resistance of five months' duration is described, in which the resistance per se was a major factor in producing diabetic coma. This was successfully treated with large amounts (9,000 units) of insulin. The resistant state returned (1,200 units daily). Prednisone was associated with a return of insulin sensitivity. Serum from the patient during the resistant period showed precipitin antibodies, increased insulin binding, and high levels of insulin-like activity by the in vitro adipose tissue assay. Plasma, 101 ml., infused into a nondiabetic patient produced profound hypoglycemia. The time-course of the induced hypoglycemia suggests a slow release of "bound insulin" in the patient's plasma. These observations suggest that the basis for insulin resistance in this instance was an inability in the insulin to reach the cell in a biologically active form at the necessary rate or else a failure of the cell to respond.

* * *

Control of Cardiac Activity by Ischemia and Hypothermia—J. M. McKain and others. Arch. Surg.—Vol. 82:511 (April) 1961.

This controlled study was set up to observe and compare the various methods for obtaining control of cardiac activity during surgery. Various cardioplegic agents and ischemia were studied under normothermic and hypothermic conditions. Thirty-six mongrel dogs were divided into two roughly equal groups. One of these groups was made mildly hypothermic—30° C. (86° F.)—by external cooling and the other was operated on at normothermia. The effect of potassium chloride, potassium citrate, and acetylcholine perfused into the coronary system was compared with ischemic arrest in each of these two groups. It was found that the return to normal and effective cardiac activity was most common in the ischemic group. This was true at both normothermic and hypothermic conditions. It was also found that the animals tolerated profound ischemia quite well.

* * *

Meprobamate and Chlorpromazine in Psychotherapy—M. Lorr and others. Arch. Gen. Psychiat.—Vol. 4:381 (April) 1961

Twenty-three Veterans Administration Mental Hygiene Clinics collaborated in a 12-week double-blind study of the effects of two tranquilizers. The sample consisted of 180 newly accepted male psychiatric outpatients. The major hypothesis was that individual psychotherapy with a tranquilizer added would be more effective in reducing anxiety and hostility than psychotherapy alone or psychotherapy with either of two control substances (phenobarbital and placebo). The findings from the viewpoint of the patient, as reflected in 12 measures, were that neither tranquilizer

(Continued on Page 36)

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References: 1. Bourque, J.-P., and Gauthier, G-E.: L'Union Medicale **89**:640 (May) 1960. 2. Cottrell, T. L. C., Rolnick, D., and Lloyd, F. A.: Rocky Mountain M. J. **56**:66 (Mar.) 1959. 3. Bourque, J.-P., and Joyal, J.: Canad. M.A.J. **68**:337 (Apr.) 1953. 4. Hughes, J., Coppridge, W. M., and Roberts, L. C.: North Carolina M. J. **17**:320 (July) 1956.

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REFERENCES AND REVIEWS

(Continued from Page 32)

used adjunctively had an advantage over either of the control substances or over psychotherapy alone in reducing anxiety and hostility. From the viewpoint of the therapist, variously assessed, anxiety was equally reduced in all groups, although verbalized hostility was increased in all active drug groups. Discontinuance of the drugs resulted in no adverse effects.

* * *

Relief of Pain by Cooling of the Skin—M. Ellis. Brit. Med. J.—Vol. 1:250 (Jan. 28) 1961

Nine years' experience in the casualty department of the General Infirmary at Leeds with the ethyl chloride spray for the treatment of acute pain in many conditions is described. These painful conditions included lumbago, acute wryneck, fibrositis, renal colic, dysmenorrhea, and fractured rib. A theory is put forward to account for the many striking successes achieved and also for the failure in some cases. The technical points necessary for success are discussed. A new fluoromethane product, which is non-toxic and nonflammable and gives the same results as ethyl chloride, is described.

* * *

Endocarditis Complicating Open Heart Surgery—J. W. Lord, A. M. Imparato, A. Hackel and E. F. Doyle. Circulation—Vol. 23 (April) 1961

Endocarditis occurred in 18 of 2,585 cases of open heart surgery. The predominant organism was Staphylococcus. Contaminated heart-lung machines, septic thrombophebitis, and contaminated blood were causative in some. The higher incidence occurred where preoperative prophylactic antibiotics were given. All patients received prophylactic antibiotics postoperatively. Early diagnosis depends upon immediate, repeated, postoperative blood cultures. Therapy should be intensive and prolonged; it may require reoperation for removal of infected intracardiac sutures or prostheses. Two cases are reported to illustrate the problems encountered.

* * *

Congenital Fibrosis of Liver as a Familial Defect—W. P. Sweetnam and C. G. W. Sykes. Lancet—Vol. 1:374 (Feb. 18) 1961

Congenital fibrosis of the liver is probably the primary anomaly in cystic disease of the liver. It may be associated with cystic disease of the kidneys and the pancreas. The syndrome is described in three siblings. One presented in renal failure; necropsy showed hepatic fibrosis and congenital cystic kidneys. The other two presented with hematemesis. The diagnosis was confirmed by liver biopsy and percutaneous transspleniportal venography. Both had portacaval anastomosis, and they remain well six and seven years later. One has cystic kidneys. Congenital hepatic fibrosis may be genetically determined and is probably dominant.

* * *

New Standards for Estimating Bone Density—W. Koch and D. Kaplan. Lancet—Vol. 1:377 (Feb. 18) 1961

The new standards are of bone contained in open-ended tubes of stainless steel (which is opaque to x-rays). The mineral content of the bone is estimated in grams of apatite per square centimeter of the shadow cast. The standards are photographed together with the living bone, the steel tubes indicating the correct position of the standards. The apatite content of the living bone is estimated by comparing it with the densities of the standards, the apatite content of which is known.

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BOOKS RECEIVED

Books received by CALIFORNIA MEDICINE *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits.*

ADVANCES IN BLOOD GROUPING—Alexander S. Wiener, M.D., F.A.C.P., Senior Bacteriologist (Serology) to the Office of the Chief Medical Examiner of New York City, Adjunct Associate Professor in the Department of Forensic Medicine of the N. Y. U. Postgraduate Medical School, and Attending Immunohemotologist to the Jewish and Adelphi Hospitals of Brooklyn, N. Y. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1961. 549 pages, $11.00.

AN ATLAS OF BRONCHOSCOPY—A. Huzly, M.D., in charge of the Surgical Division at the Sanatorium Schillerhohe of the LVA Württemberg Stuttgart-Gerlingen. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1961. 95 pages, $12.50.

ARTHUR E. HERTZLER: THE KANSAS HORSE-AND-BUGGY DOCTOR—Edward H. Hashinger, Professor Emeritus of Medicine and Gerontology and Lecturer in the History of Medicine, University of Kansas School of Medicine. Ninth series of the Logan Clendening Lectures on the History and Philosophy of Medicine. University of Kansas Press, Lawrence, Kansas, 1961. 37 pages, $2.00.

CARDIOPERICARDIOMYOPEXY — NEW SURGICAL TREATMENT FOR HEART DISEASES—Dr. Aaron N. Gorelik (New York), in collaboration with Prof. Camille Lian (Paris), Prof. Louis Thieblot (Clermont-Ferrand), Dr. Mendel Jacobi (New York), Dr. Ralph Ricciardi (New York), Dr. Madeleine Hascher (Paris). Revised English Edition of "La Cardiopericardiomyopexie," Expansion Scientifique Francaise, Paris, 1956. Published by the Myopexy Association, Inc., 250 West 57th Street, Suite 1302-3, New York 19, N. Y., 1960. 176 pages. No price quoted.

NEW BOOK

PEDIATRIC X-RAY DIAGNOSIS

By JOHN CAFFEY, M.D. 4th ed. 1236 pages. Illustrated. (1961) Year Book. $32.

127 new subjects and hundreds of new illustrations have been added to this classic. Of special importance is the emphasis placed on what the author terms "the most pressing current problem in pediatric radiology—the reduction of hazards to the patient from exposure to ionizing radiation." Among the more important additions are 11 new variants in the skull, cranial changes in iron deficiency anemia and in cyanotic heart disease, dermoid of the nose, schematic drawings of the maturation of the normal cervical spine, kyphosis and accelerated maturation of the sternum associated with congenital heart disease. Special attention is given to roentgen findings in the normal skeleton at different age levels, including tables and drawings which demonstrate the progressive stages of bone growth and maturation from birth. The author is Director of Medical Education, Children's Hospital, Denver.

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CHINA DOCTOR—The Life Story of Harry Willis Miller—Raymond S. Moore. Harper & Brothers, Publishers, 49 East 33rd Street, New York 16, N. Y., 1961. 215 pages, $3.95.

CLINICAL OBSTETRICS AND GYNECOLOGY—Volume 4, Number 1, March 1961, Obstetric Anesthesia and Analgesia, edited by Robert A. Hingson, M.D., and **Vaginal Surgery**, edited by Abraham F. Lash, M.D., Ph.D. A Quarterly Book Series, published by Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1961. $18.00 a year for four consecutive numbers issued quarterly (by subscription only).

DRUG ADDICTION: CRIME OR DISEASE? Interim and Final Reports of the Joint Committee of the American Bar Association and the American Medical Association on Narcotic Drugs. Introduction by Alfred R. Lindesmith. Indiana University Press, Bloomington, Indiana, 1961. 173 pages, $2.95.

FROM GIRLHOOD TO WOMANHOOD—Albert Sharman, M.D., D.Sc., F.R.C.O.G. Foreword by Lady Isobel Barnett, M.B., Ch.B. The Williams & Wilkins Co., Baltimore 2, Maryland, exclusive U. S. agents, 1960. 72 pages, $1.75.

HANDBOOK OF PEDIATRICS—4th Edition—Henry K. Silver, M.D., Professor of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; C. Henry Kempe, M.D., Professor of Pediatrics and Head, Department of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; and Henry B. Bruyn, M.D., Associate Professor of Pediatrics and Medicine, University of California School of Medicine, San Francisco, California. Lange Medical Publications, Los Altos, California, 1961. 574 pages, $3.50.

HANDBOOK OF SURGERY—Edited by John L. Wilson, M.D., Chief of Surgery, Veterans Administration Hospital, San Francisco, California; Associate Clinical Professor of Surgery, University of California School of Medicine, San Francisco, California; and Joseph J. McDonald, M.D., Dean of the Faculty of Medical Sciences, American University of Beirut, Beirut, Lebanon; formerly Professor of Surgery, Columbia University, New York. Lange Medical Publications, Los Altos, California, 1960. 644 pages, $4.00.

HEALING HEART, THE—John Carlova, with Ora Ruggles. Julian Messner, Inc., 8 West 40th St., New York 18, 1961. 256 pages, $3.95.

INTRA-ABDOMINAL CRISES — Kenneth D. Keele, M.D., F.R.C.P., Consultant Physician; and Norman M. Matheson, F.R.C.S., M.R.C.P., F.A.C.S., Consultant Surgeon, Ashford Hospital, Middlesex (Staines Group). Butterworth Inc., 7235 Wisconsin Avenue, Washington 14, D. C., 1961. 397 pages, $10.00.

LOSE WEIGHT AND LIVE—Robert P. Goldman. Doubleday & Company, Inc., 575 Madison Ave., New York 22, N. Y., 1961. 235 pages, $3.95.

MIRAGE OF HEALTH—Utopias, Progress, and Biological Change—René Dubos. Anchor Books, Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York, 1961. Paper Back Book, 235 pages, 95 cents.

NEURORADIOLOGY WORKSHOP—Volume I: Scalp, Skull and Meninges. Leo M. Davidoff, M.D., Active Consultant Neurosurgeon, Montefiore Hospital; Professor and Chairman, Department of Neurosurgery, Albert Einstein College of Medicine, Yeshiva University, New York; Harold G. Jacobson, M.D., Chief, Division of Diagnostic Radiology, Montefiore Hospital; Professor of Clinical Radiology, New York University School of Medicine, New York; and Harry M. Zimmerman, M.D., Chief, Division of Laboratories, Montefiore Hospital; Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1961. 256 pages, $16.50.

TEXTBOOK OF PATHOLOGY, A—An Introduction to Medicine—7th Edition, Thoroughly Revised. William Boyd, M.D., Dipl. Psychiat., M.R.C.P. (Edin.), Hon. F.R.C.P. (Edin.), F.R.C.P. (Lond.), F.R.C.S. (Can.), F.R.S. (Can.), LL.D. (Sask.), (Queen's), D.Sc. (Man.), M.D. (Oslo). Professor Emeritus of Pathology, The University of Toronto; Visiting Professor of Pathology, The University of Alabama; formerly Professor of Pathology, The University of Manitoba and the University of British Columbia. Lea & Febiger, 600 South Washington Square, Philadelphia 6, Pa., 1961. 1370 pages, 792 illustrations and 20 plates in color, $18.00.

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Volume 94 JUNE 1961 Number 6

Chronic Renal Failure

Its Effect on Calcium, Phosphorus and Osseous Metabolism; A Unified Approach

CHARLES R. KLEEMAN, *M.D.*, and
DONALD BERNSTEIN, *M.D.*, Los Angeles

• The renal osteodystrophies represent the metabolic consequences of (1) vitamin D resistance, (2) secondary hyperplasia of the parathyroids, and (3) the changes in serum $PO_4^{=}$ and Ca^{++} secondary to the renal insufficiency per se.

The osseous lesion in any given patient with chronic renal failure may be osteitis fibrosa, rickets (osteomalacia), calcium deficiency osteoporosis or any combination of these. The concentration of Ca^{++} and $PO_4^{=}$ in the serum is determined by the degree of renal failure and the skeletal response to parathyroid hormone.

CHRONIC RENAL DISEASE, accompanied by progressive destruction of nephron mass and azotemia, frequently causes hypocalcemia, hyperphosphatemia and osseous disorders. The latter, referred to as renal osteodystrophy, consist of retardation of growth and dwarfism, osteitis fibrosa, rickets or osteomalacia, or rarely osteosclerosis. Stanbury and coworkers recently classified these disorders and described their symptomatology in excellent reviews.[9,10] Physicians who care for large numbers of children or adults with chronic renal failure are impressed by the lack of correlation between the levels of calcium and inorganic phosphorus in the serum and between these biochemical changes and the osseous pathologic changes. Similarly, therapy directed toward a correction of these abnormalities —alkali administration, high calcium diets and phosphate-binding in the gastrointestinal tract with aluminum hydroxide gels—has frequently been unsuccessful.

It is hoped that the following scheme will contribute to a better understanding of the deranged calcium, phosphorus and osseous metabolism in chronic renal failure and to its therapy. The scheme is based on the following observations.*

1. The parathyroid glands are stimulated by a reduction in the level of free calcium ion (Ca^{++}) in the body fluids (and questionably a rise in serum phosphorus per se).

2. Parathyroid hormone regulates the level of Ca^{++} in the body fluids by (a) enhancing the liberation of skeletal calcium, (b) increasing the renal clearance of phosphorus, and (c) *decreasing* the renal clearance of Ca^{++}.[1,7,12]

3. For any given level of parathyroid activity, a rise in the concentration of inorganic phosphorus

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From the Department of Medicine, Mount Sinai Hospital, Los Angeles 48, and Department of Medicine, University of California Medical Center, Los Angeles 24.

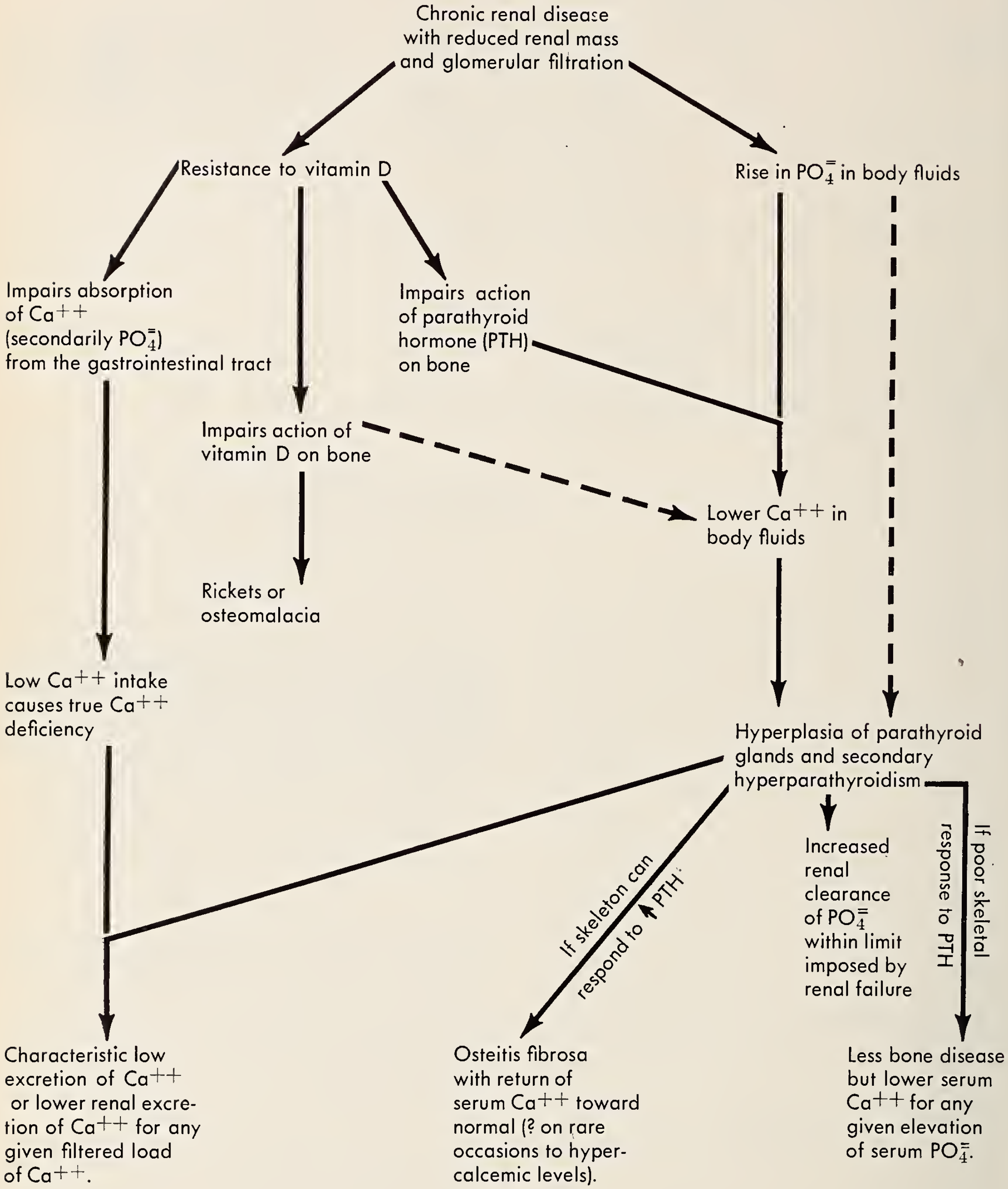
Supported by a Public Health Service Grant (A-1620), National Institutes of Health, Public Health Service.

Chief of Medicine, Mount Sinai Hospital and Associate Professor of Medicine, UCLA Medical Center, Los Angeles (Kleeman); Special Fellow, National Institute of Arthritis and Metabolic Diseases, United States Public Health Service (Bernstein).

Submitted March 20, 1961.

*References have been included for those observations derived from recent investigations. It is reasonable to consider these as still tentative.

CHART 1. CALCIUM AND PHOSPHORUS METABOLISM IN CHRONIC RENAL FAILURE


Chronic renal disease with reduced renal mass and glomerular filtration
Resistance to vitamin D
Rise in $PO_4^{=}$ in body fluids
Impairs absorption of Ca^{++} (secondarily $PO_4^{=}$) from the gastrointestinal tract
Impairs action of parathyroid hormone (PTH) on bone
Impairs action of vitamin D on bone
Lower Ca^{++} in body fluids
Rickets or osteomalacia
Low Ca^{++} intake causes true Ca^{++} deficiency
Hyperplasia of parathyroid glands and secondary hyperparathyroidism
Increased renal clearance of $PO_4^{=}$ within limit imposed by renal failure
If skeleton can respond to ↑ PTH
If poor skeletal response to PTH
Characteristic low excretion of Ca^{++} or lower renal excretion of Ca^{++} for any given filtered load of Ca^{++}.
Osteitis fibrosa with return of serum Ca^{++} toward normal (? on rare occasions to hypercalcemic levels).
Less bone disease but lower serum Ca^{++} for any given elevation of serum $PO_4^{=}$.

The final bone lesion may be osteitis fibrosa, rickets (osteomalacia), calcium deficiency osteoporosis, or any combination of these. This scheme does not explain the rare case of osteosclerosis (increased density of bone) seen in chronic renal disease.

in the body fluids causes a decrease in the concentration of Ca^{++}. This results from a shift of Ca^{++} into the skeleton and the establishment of a new dynamic equilibrium with a higher serum PO$_4^{=}$ and lower Ca^{++} concentration.

4. Vitamin D deficiency or resistance to this vitamin impairs the action of parathyroid hormone on the skeleton[2,6,8]—that is, in the absence of an effect of vitamin D on the skeleton, greater than normal amounts of parathyroid hormone are necessary to maintain the Ca^{++} concentration in body fluids.

5. Vitamin D deficiency causes secondary hyperplasia of the parathyroid glands.

6. Pronounced resistance to vitamin D exists in patients with chronic renal failure.[4,9,10]

7. Secondary hyperplasia of the parathyroid glands accompanies chronic renal failure.

Chronic renal disease, at some stage in its development (the duration is unknown), causes an increased resistance to the action of vitamin D on the gastrointestinal tract and the skeleton.[4,9,10] Stanbury[9,10] and Dent[4] have amply demonstrated this resistance, but the exact cause of it is unknown. When this occurs, there is impaired absorption of calcium (and secondarily of phosphorus) from the gastrointestinal tract, the development of rachitic or osteomalacic demineralization, and defective activity of parathyroid hormone on the skeleton. This sequence of events, particularly the latter, can lead to a fall in Ca^{++} in body fluids before there is a significant rise in the concentration of PO$_4^{=}$. However, when the degree of renal impairment is great enough (usually to 25 per cent of normal[5]) to cause a rise in the concentration of PO$_4^{=}$, this will contribute significantly to the fall in serum Ca^{++}. A decrease in the concentration of Ca^{++} will cause the characteristic secondary hyperplasia of the parathyroid glands. If the skeleton can respond to the sustained increase in the level of circulating parathyroid hormone, normal levels of Ca^{++} in the body fluids may be achieved, but at the expense of the development of varying degrees of osteitis fibrosa. A poor osseous response to parathyroid hormone would be associated with less bone disease but more pronounced hypocalcemia for any given elevation of serum PO$_4^{=}$. Stanbury said that in patients with severe hypocalcemia (5 mg. per 100 cc. or less) radiographic evidence of hyperparathyroidism was definitely less than in patients with more normal levels of serum calcium.[9]

In the kidneys, unlike the skeleton, there is no evidence that the response to parathyroid hormone is impaired by vitamin D deficiency or resistance. The response is limited, however, by the degree of renal impairment or reduction in functioning nephrons. Nevertheless, under the influence of the increased circulating level of parathyroid hormone, the residual renal tubules would reabsorb a greater amount of the filtered calcium[1,7,12] and a lesser amount of the filtered phosphorus. This is the pattern characteristically observed as chronic renal disease progresses.

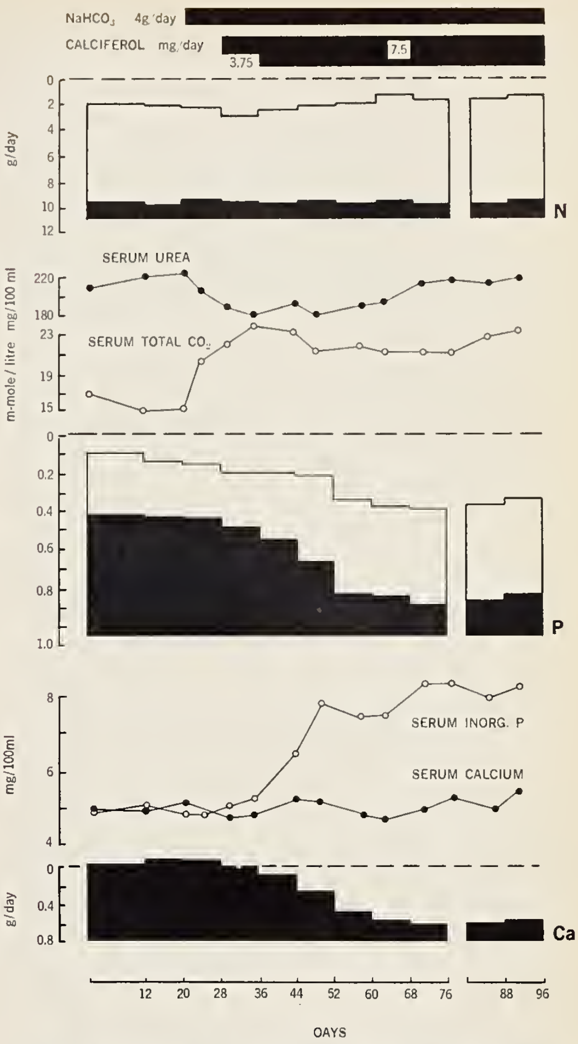


Chart 2.—The effect of calciferol on calcium and phosphorus balance and the concentration of calcium and inorganic phosphorus in the serum. Intake is recorded from the zero line down, output from the intake line up. Black area represents fecal output and grey area represents urinary output. Note that despite the strongly positive balance of calcium, serum calcium did not rise. The positive balance of phosphorus was accompanied by a progressive increase in serum phosphorus. (From Stanbury,[9] with permission of the author.)

The scheme presented in Chart 1 allows the formulation of a reasonable approach to therapy. Obviously, if the course of the chronic renal disease can be slowed or reversed, this should be attempted. Frequently this is not possible. Vitamin D resistance and its metabolic consequences must be treated by adequate doses of vitamin D or dihydrotachysterol.

This may require 1 to 10 mg. (40,000 to 400,000 units) of active sterol. An adequate (1 gm.) but not excessive intake of calcium should be prescribed. If the concentration of phosphate in the serum is elevated before sterol therapy or, as frequently occurs, it rises decidedly during therapy (Chart 2), dietary restriction of phosphorus or the administration of aluminum hydroxide gels is indicated. An increasing serum $PO_4^=$ can definitely prevent a rise in the calcium concentration of the serum, despite a good objective and subjective skeletal response to vitamin D (Chart 2).[9] Phosphorus restriction per se may, by decreasing the concentration of serum $PO_4^=$, cause a rise in the concentration of Ca^{++}. However, Stanbury and Dent[9] emphasized that the elevation of serum $PO_4^=$ does not in itself cause the osteodystrophy, and Dent[3] noted that the phosphorus deficiency that may follow the administration of aluminum hydroxide gel may cause a worsening of the osseous disorder. Therefore, phosphorus restriction and aluminum hydroxide gels should be used, when necessary, in conjunction with vitamin D therapy to prevent a decided rise in serum $PO_4^=$ concentration.

It has been suggested for some time, and confirmed by Stanbury,[9,10,11] that patients with normal concentrations of Ca^{++} in their serum despite pronounced elevation of serum $PO_4^=$, have a severe degree of secondary hyperparathyroidism. In fact, Dent[3] observed a case of secondary hyperparathyroidism in which the level of ionized or free Ca^{++} in the serum was above normal. This certainly suggests a state of autonomous overactivity of the parathyroids. Stanbury observed that patients of this type may definitely benefit from subtotal parathyroidectomy, whereas the administration of vitamin D before parathyroidectomy may induce dangerous metastatic calcification. This latter point serves to emphasize that whenever vitamin D is used in the treatment of renal osteodystrophy the physician must be aware of the fact that the strikingly beneficial objective and subjective effects can be replaced by the hazardous signs of vitamin D intoxication and hypercalcemia.

Mt. Sinai Hospital, 8720 Beverly Boulevard, Los Angeles 48 (Kleeman).

REFERENCES

1. Bernstein, D., Kleeman, C. R., Dowling, J. T., and Maxwell, M. H.: The effect of parathyroidectomy and administration of partially purified parathyroid extract on the renal clearance of calcium and phosphorus in dogs, First International Congress of Endocrinology, 1960, Copenhagen.

2. Bernstein, D., Kleeman, C. R., Dowling, J. T., and Maxwell, M. H.: Steatorrhea, functional hypoparathyroidism, and metabolic bone defect, Arch. Int. Med. In press.

3. Dent, C. E.: Discussion of reference 9 in: Recent Advances in Renal Disease.

4. Dent, C. E., Harper, C. M., and Philpot, G. R.: The treatment of renal glomerular osteodystrophy, Quart. J. Med., 30:1, Jan. 1961.

5. Goldman, R., and Bassett, S. H.: Phosphorus excretion in renal failure, J. Clin. Invest., 33:1623, Dec. 1954.

6. Harrison, H. C., Harrison, H. E., and Park, E. A.: Effect of vitamin D in rats fed diets adequate in both calcium and phosphorus, Am. J. Physiol., 192:432, Feb. 1958.

7. Kleeman, C. R., Bernstein, D., Rockney, R., Dowling, J. T., and Maxwell, M. H.: Studies on the renal clearance of diffusible calcium and the role of parathyroid glands in its regulation. The Parathyroids, Editors, Greep, R. O., and Talmage, R. V., 1961. C. C. Thomas, Philadelphia.

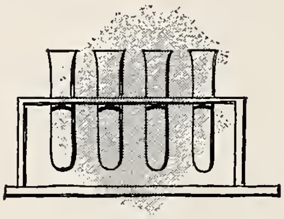
8. Rasmussen, H.: Parathyroid hormone, nature and mechanism of action, Am. J. Med., 30:112, Jan. 1961.

9. Stanbury, S. W.: Renal osteodystrophy. Recent Advances in Renal Disease, Editor M. D. Milne, 1960. Pitman Med. Publ. Co., Ltd., London.

10. Stanbury, S. W.: Azotaemic renal osteodystrophy, Brit. Med. Bull., 13:57, 1957.

11. Stanbury, S. W., Lumb, G. A., and Nicholson, W. F.: Elective subtotal parathyroidectomy for renal hyperparathyroidism, Lancet. 1:793, April 9, 1960.

12. Talmage, R. V.: Studies on the maintenance of serum calcium levels by parathyroid action on bone and kidney, Ann. N. Y. Acad. Sci., 64:326, 1956.



Coccidioidal Meningitis

The Use of Amphotericin B in Treatment

HANS E. EINSTEIN, *M.D.*, CHARLES W. HOLEMAN, JR., *M.D.*,
LEWIS L. SANDIDGE, *M.D.*, and DAVID H. HOLDEN, *M.D.*, Bakersfield

• Amphotericin B is the first agent to alter favorably the course of coccidioidal meningitis. The morbidity and toxicity of the drug are at present its chief limiting factors.

Although no cures were obtained in a series of 11 cases, significant remissions usually followed a course of therapy. Comparison with similar groups showed a significant prolongation of life in adequately treated cases.

THE NEED for an effective therapeutic agent in the deep mycotic diseases has long been recognized. Well over fifty drugs have been given clinical trials,[2,5,7,9] yet until recently none has shown sufficient promise to warrant extensive investigation. The search has continued unabated, however, since in endemic areas the deep mycotic lesions continue as a major cause of morbidity and a minor but significant cause of death.[20,24]

The southern San Joaquin Valley is the most highly endemic area of coccidioidal infection[16,23] with several thousand new cases annually. Of these about 0.2 per cent develop into disseminated disease,[22] usually accompanied by a complement fixation titer of 1:32 or higher.[25] In about 25 per cent of these cases, meningitis,[1,15,19] which has been considered to be universally fatal,[31] will develop. Some of the nonmeningeal disseminated cases also terminate fatally due to generalized dissemination or chronic progressive disease involving bones and viscera.

Amphotericin B, an antifungal agent obtained from a species of *Streptomyces* found on the shores of the Orinoco River in Venezuela,[7,29] is the first extensively investigated drug in the treatment of the deep mycotic infections.

The problems in evaluating the results of therapy in disseminated coccidioidal disease were discussed with great clarity by Fiese.[5] Coccidioidal meningitis is reasonably predictable in its behavior. In view of its invariably fatal outcome the ultimate test of any therapeutic modality is the demonstration of its ability to affect coccidioidal meningitis, since for nonmeningeal disseminated disease there is a high incidence of spontaneous remission and cure. None of the drugs used in the past has affected the course of coccidioidal meningitis.

The present report summarizes our experience in the use of amphotericin B in the treatment of coccidioidal meningitis and is chiefly concerned with our observations of the effectiveness of the drug.

METHODS AND MATERIALS

In a period of three years 11 consecutive patients with coccidioidal meningitis have been treated with amphotericin B in essentially the manner described by Winn.[32] Necropsy was performed in all patients who died. Diagnosis was established by the following laboratory criteria:

Spinal fluid findings:

1. Pleocytosis.
2. Elevated protein.
3. Complement fixation titer of 4+ at 1:2 dilution[25] or higher, *on more than one specimen.*

   or
4. Positive culture for *Coccidioides immitis.*

The spinal fluid pressure was usually elevated and a first-zone colloidal gold curve was almost always present, but these findings were not considered essential to the diagnosis.

Amphotericin B was administered intravenously six days each week at a dose of 1 mg. per kilogram of body weight daily. During the first half of the reporting period, amphotericin B was given intravenously only and was temporarily discontinued when azotemia developed. More recently, both intravenous and intraspinal therapy were used in view of the poor transference of the drug across the blood-brain barrier.[6,18,21] During this period treatment was not interrupted because of azotemia; instead, if the blood urea nitrogen rose above 50 mg. per

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From the Coccidioidal Study Group, Kern County General Hospital, Bakersfield.

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100 cc. the intravenous dose was temporarily decreased by half and then slowly increased again. Amphotericin B for intravenous use was mixed with 5 per cent dextrose and water to a concentration of 10 mg. per 100 ml. and heparin was added. Early in the study diphenhydramine was added to the intravenous solution as suggested by Winn,[32] and in some instances we added pyridoxine and ascorbic acid. More recently we have added only heparin, 30 mg., as the patients seemed to have less difficulty with chills and fever when other drugs were not added to the solution. Intraspinal amphotericin B was administered three times weekly in doses of 0.5 to 5.0 mg. each with 25 mg. of hydrocortisone.

Rest was stressed only when patients were acutely ill. When elevated, spinal fluid pressure was lowered by tapping and withdrawal daily. Heat lamps and extra blankets were used during the administration of intravenous amphotericin B and seemed to be of some benefit in decreasing the incidence and severity of febrile reactions. Pipamazine, prochlorperazine or chlorpromazine was administered as needed to alleviate nausea. Antihistamines and aspirin were used in an attempt to control febrile reactions.

Planned interval therapy was used during the last year of the reporting period, including weekly, quarterly and semiannual courses. The more prolonged courses of amphotericin B, in most instances, had to be discontinued because of thrombophlebitis which made further intravenous drug administration impossible. In some cases a polyethylene catheter was placed in available veins to facilitate further administration of the drug in very ill patients.

CONTROLS

No truly comparable group was available to act as a control, and placebo therapy was impractical. Therefore, in order to supplement previously published information on life expectancy, the hospital records of all patients with a diagnosis of coccidioidal meningitis during the preceding ten-year period were reviewed. The following criteria were established for inclusion in this "control" series:

1. The diagnosis must have been confirmed in accord with the criteria used for the current series, or necropsy findings had to be conclusive.
2. Some reasonable estimate of duration of meningitis could be established from the records.
3. The patient must not have received amphotericin B.

Sixty consecutive charts were reviewed and 31 were found to meet these criteria. These were analyzed in terms of survival time only (Table 1).

Buss, Gibson and Gifford reviewed 53 cases of coccidioidal meningitis seen in Kern County before 1950.[3] The duration of meningitis was unknown in three of the cases and three patients were still living at the time of their report. Of the remaining 47 patients (Table 1), 15 died within three months of onset, 23 others died within 12 months, seven lived more than one year and two lived almost two years.

TABLE 1.—*Comparative Two-Year Survival in Coccidioidal Meningitis*

		No Amphotericin	
	Treated with Amphotericin	Cases from Preceding 10-Year Period	Tabulated from Buss, et al.[3]
Patients:			
Followed two years or until death	7	31	47*
Living one year after onset	5	2	9
Living two years after onset	5†	0	0

*Fifty-three patients in original report, duration of disease not reported in six of these cases.

†Two of these patients have now lived 3 years, two have died at 27 and 34 months respectively and one is still living but has been followed less than 3 years.

RESULTS

With one exception all patients showed some evidence of clinical and laboratory improvement when amphotericin B was used initially (Table 2). Improvement in spinal fluid findings consisted of decrease of cell count and fall in the complement fixation titer. The spinal fluid pressure decreased and there was clearing of sensorium and relief of headache. Symptomatic improvement was generally significant.

Four patients died while under active therapy. Death in these patients occurred at four and a half, ten, twenty-seven and thirty-four months after onset. In all instances there was evidence of active coccidioidal meningitis at autopsy. In three cases *Coccidioides immitis* was cultured from the surfaces of the brain and meninges. The specimen for culture was inadvertently discarded in the fourth case, but spherules of *Coccidioides immitis* were demonstrated in tissue sections.

The seven surviving patients had lived 7, 7, 9, 18, 21, 36 and 37 months, respectively, at the time of this report. These seven patients had received a total of 15 courses of therapy and had shown improvement during each course. In no instance has a cure yet been obtained in this series. Symptoms usually recur in three to six months after active therapy is terminated. At that time, the spinal fluid shows an increase in pleocytosis and frequently an increase in complement fixation titer. The surviving patients are all carrying on their usual activities except when under active therapy.

TABLE 2.—*Data on Eleven Patients with Coccidioidal Meningitis Treated with Amphotericin B*

		Amphotericin Therapy			Spinal Fluid Findings				Blood		
			Total Dose Each Course		Cells		C.F.* Titer		C.F. Titer		
Case No.	Identifying Data and Survival	Months Treated	Gm. I.V.*	Mg. I.S.*	B.T.*	A.T.*	B.T.	A.T.	B.T.	A.T.	Comments
1.	49-year-old white male living 37 months after onset	1 9 1½ 1½	1.5 7.2 2.3 2.5	0 25.5 7.7 10.0	600 354 107 77	488 34 50 57	4+ @ 1:8 3+ @ 1:64 4+ @ 1:8 4+ @ 1:2	N.D. 4+ @ 1:8 4+ @ 1:2 4+ @ 1:2	1+ @ 1:6 3+ @ 1:64 4+ @ 1:16 4+ @ 1:8	N.D. 4+ @ 1:8 2+ @ 1:16 4+ @ 1:8	Treated elsewhere 1 month after onset. Disoriented when admitted to KGH 10 months later; treated I.V. only for 6 months and I.V. and I.S. for 3 additional months. Has worked full time as fireman since except for planned interval therapy.
2.	29-year-old white male living 36 months after onset	2 1 1½	2.1 3.2 2.05	0 13.4 18.0	300 162 119	110 5 62	3+ @ 1:2 2+ @ 1:16 4+ @ 1:4	N.D. 4+ @ 1:4 4+ @ 1:2	4+ @ 1:4 3+ @ 1:64 4+ @ 1:16	3+ @ 1:4 4+ @ 1:8 4+ @ 1:8	First treated 1 month after onset. Works full time as electrical engineer except for planned interval treatment.
3.	26-year-old Negro female living 18 months after onset	3 4	3.2 3.5	15.0 34.0	222 198	5 50	N.D. 4+ @ 1:8	4+ @ 1:4 3+ @ 1:8	4+ @ 1:32 4+ @ 1:256	3+ @ 1:512 4+ @ 1:128	Onset immediately postpartum. First treated 2 weeks after onset. Disoriented when admitted 6 months later. Now working as housewife.
4.	15-year-old white male living 21 months after onset	5½ 2 1½	5.1 3.5 2.3	20 42.5 0	84 115 182	8 5 34	3+ @ 1:2 2+ @ 1:4 2+ @ 1:4	0 2+ @ 1:4 N.D.	1+ @ 1:8 4+ @ 1:16 4+ @ 1:8	4+ @ 1:16 2+ @ 1:16 N.D.	Initial treatment one week after onset. I.S. therapy discontinued at end of 2nd course because of arachnoiditis. Attends school full time except on days treated.
5.	41-year-old white male living 9 months after onset	8	5.5	3.2	700	13	2+ @ 1:2	Neg.	4+ @ 1:32	1+ @ 1:16	Initial treatment 1 month after onset, treated in hospital for 2¾ months, and weekly at home since. I.S. therapy discontinued because of arachnoiditis. Works full time as geologist.
6.	19-year-old white male living 7 months after onset	5½	2.0	27	535	74	1+ @ 1:2	1+ @ 1:2	2+ @ 1:16	N.D.	Treated as inpatient for 45 days starting 2 weeks after onset. Since has been treated once weekly. Attends college full time.
7.	29-year-old white male living 7 months after onset	4½	5.4	18	1390	46	3+ @ 1:8	4+ @ 1:16	3+ @ 1:64	4+ @ 1:32	Pneumonia and meningitis on admission. I.V. therapy only for 3 months, then I.V. and I.S.
8.	32-year-old Mexican male expired 34 months after onset	2 9	1.5 7.3	0 30.0	18 55	N.D. 2	Neg. 2+ @ 1:4	Neg. N.D.	4+ @ 1:16 4+ @ 1:16	N.D. 4+ @ 1:8	First treated 22 months after onset. Improved with first course and initially with second course followed by downhill course and death.
9.	44-year-old Negro male expired 27 months after onset	1½ 5 3	1.9 7.6 3.8	0 39.0 30.0	511 520 154	173 2 169	N.D. N.D. 4+ @ 1:8	1+ @ 1:32 4+ @ 1:8 4+ @ 1:64	4+ @ 1:32 N.D. 4+ @ 1:64	1+ @ 1:512 N.D. 1+ @ 1:64	First treated 9 months after onset, disoriented on 2nd admission; treated I.V. for 1 month, then I.V. and I.S. Initially improved during 3rd course followed by downhill course and death.
10.	41-year-old Negro male expired 10 months after onset	8	4.8	19.0	390	2000	3+ @ 1:4	N.D.	3+ @ 1:16	4+ @ 1:32	I.V. therapy started 1 month after onset. Initial improvement down to 45 WBS in CSF, then relapsed and died despite vigorous I.V. and I.S. therapy for 1 month.
11.	59-year-old Filipino expired 4½ months after onset	1	12	26.0	1090	340	4+ @ 1:64	4+ @ 1:64	4+ @ 1:64	4+ @ 1:64	Moribund on admission 3½ months after onset. No improvement. Died 1 month later.

*I.V. = Intravenous. B.T. = Before treatment. C.F. = Complement fixation. N.D. = Not done. I.S. = Intraspinal. A.T. = After treatment.

Difficulty in the administration of amphotericin B and drug toxicity was similar to that previously reported.* This has included headache, generalized pain, anorexia, nausea, occasionally vomiting, chills, fever, azotemia, anemia and thrombophlebitis. The latter, in particular, makes very protracted intravenous administration difficult. Paresthesias and transient arachnoiditis occurred during intraspinal administration of the drug, the latter severe enough in two cases to force discontinuance of intraspinal therapy. The more severe reactions were associated with intraspinal doses of 2.5 mg. or greater.

COMMENT

Longevity of patients treated with amphotericin B is compared with that in patients who received no amphotericin in Table 1. Despite the very rare case of chronic coccidioidal meningitis which may follow a very indolent course with survival of five to ten years after onset,[8,14,17] death, in the untreated patient, usually occurs within the first year, and seldom does the patient survive two years.[1,19,30]

In virtually every course of therapy, totaling over 20, the morbidity and toxicity of the drug was the deciding factor forcing discontinuing its use. This may well be the reason for the invariable relapses in the present series. Induced drug resistance has been demonstrated, and it has been speculated that such resistance may emerge in clinical practice.[12,26,28] However, in this series the subsequent courses generally were as effective as the initial one, at times requiring less drug and time to achieve equivalent clinical and laboratory results. This agrees with the observations of Littman.[11] A fungistatic but not fungicidal effect may well explain the drug action in clinical practice.

More effective means of ameliorating the toxicity of amphotericin B are needed so that much more prolonged courses of therapy might be employed. The use of long term intermittent administration may help overcome some of the obstacles. However, the possibility remains that the organism may eventually develop resistance to the drug. The addition of secondary or tertiary antifungal agents may be of value. Some of these avenues are currently being explored, and special studies on the azotemia and anemia so generally observed are in progress.

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1017 Niles Street, Bakersfield (Holeman, Jr.).

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*References 2, 4, 6, 10, 11, 13, 18, 21, 32.

REFERENCES

1. Abbott, K. H., and Cutler, O. I.: Chronic coccidioidal meningitis, Arch. Path., 21:320, March 1936.

2. Appelbaum, E., and Shtokalko, S.: Cryptococcus meningitis arrested with amphotericin B, Ann. Int. Med., 47:346, Aug. 1957.

3. Buss, W. C., Gibson, T. E., and Gifford, M. A.: Coccidioidomycosis of the meninges, Calif. Med., 72:167, March 1950.

4. Colwell, J. A.: Remission in disseminated coccidioidomycosis produced by amphotericin B, Ann. Int. Med., 50: 1028, April 1959.

5. Fiese, M. M.: Coccidioidomycosis, Charles C. Thomas, Springfield, Illinois, 1958.

6. Fitzpatrick, M. J., Rubin, H., and Poser, C. M.: The treatment of cryptococcal meningitis with amphotericin B, a new fungicidal agent, Ann. Int. Med., 49:249, Aug. 1958.

7. Gold, W., Stout, H. A., Pagano, J. F., and Donovick, R.: Amphotericins A and B antifungal antibiotics produced by a streptomycete. I. In vitro studies, Antibiotics Ann. 1955-1956, p. 579, Medical Encyclopedia, Inc., New York, 1956.

8. Jenkins, V. E., and Postlewaiter, J. C.: Coccidioidal meningitis: Report of four cases with necropsy findings in three cases, Ann. Int. Med., 35:1068, Nov. 1951.

9. Lehan, P. H., Yates, J. L., Brasher, C. A., Larsh, H. W., and Furcolow, M. L.: Experiences with the therapy of sixty cases of deep mycotic infections, Dis. Chest, 32:597, Dec. 1957.

10. Littman, M. L.: Preliminary observations on the intravenous use of amphotericin B, an antifungal antibiotic, in the therapy of acute and chronic coccidioidal osteomyelitis, Proceedings of Symposium on Coccidioidomycosis, U. S. Public Health Service Bull., No. 575, p. 86, 1957.

11. Littman, M. L., Horowitz, P. L., and Swadey, J. G.: Coccidioidomycosis and its treatment with amphotericin B, Am. J. Med., 24:568, April 1958.

12. Littman, M. L., Pisano, M. A., and Lancaster, R. M.: Induced resistance of Candida species to nystatin and amphotericin B, Antibiotics Ann. 1957-1958, p. 981, Medical Encyclopedia, Inc., New York, 1958.

13. Newcomer, V. D., Sternberg, T. H., Wright, E. T., and Reisner, R. M.: Current treatment of the systemic fungus infections, J. Chron. Dis., 9:353, April 1959.

14. Norman, D. D., and Miller, Z. R.: Coccidioidomycosis of the central nervous system, a case of ten years duration, Neurology, 4:713, Sept. 1954.

15. O'Leary, D. J., and Curry, F. J.: Coccidioidomycosis. A review and presentation of 100 consecutively hospitalized patients, Am. Rev. Tuber., 73:501, April 1956.

16. Palmer, C. E., Edwards, P. Q., and Allfather, W. E.: Characteristics of skin reactions to coccidioidin and histoplasmin, with evidence of an unidentified source of sensitivity in some geographic areas, Proceedings of Symposium on Coccidioidomycosis, U. S. Public Health Service Bull., No. 575, p. 171, 1957.

17. Rosen, E., and Belber, J. P.: Coccidioidal meningitis of long duration: Report of a case of four years and eight months with necropsy findings, Ann. Int. Med., 34:796, March 1951.

18. Rubin, H., and Furcolow, M. L.: Promising results in cryptococcal meningitis, Neurology, 8:590, Aug. 1958.

19. Schlumberger, H. G.: A fatal case of coccidioidomycosis with cultural studies, Am. J. M. Sc., 209:483, April 1945.

20. Scogins, J. T.: Comparative study of time loss in coccidioidomycosis and other respiratory diseases, Proceedings of Symposium on Coccidioidomycosis, U. S. Public Health Service Bull., No. 575, p. 132, 1957.

21. Seabury, J. H., and Dascomb, H. E.: Experience with amphotericin B for the treatment of systemic mycoses, Arch. Int. Med., 102:960, Dec. 1958.

22. Smith, C. E.: Coccidioidomycosis, M. Clin. North America, 27:790, May 1943.

23. Smith, C. E., Beard, R. R., Rosenberger, H. G., and Whiting, E. G.: Effect of season and dust control on coccidioidomycosis, J.A.M.A., 132:833, Dec. 7, 1946.

24. Smith, C. E., Pappagianis, D., and Saito, M. T.: The public health significance of coccidioidomycosis, Proceedings of Symposium on Coccidioidomycosis, U. S. Public Health Service Bull., No. 575, p. 3, 1957.

25. Smith, C. E., Saito, M. T., and Simmons, S. A.: Pattern of 39,500 serological tests in coccidioidomycosis, J.A.M.A., 160:546, Feb. 18, 1956.

26. Sorensen, L. J., McNall, E. G., and Sternberg, T. H.: The development of strains of *Candida albicans* and *Coccidioides immitis*, which are resistant to amphotericin B. Antibiotics Ann. 1958-1959, p. 920, Medical Encyclopedia, Inc., New York, 1959.

27. Sox, H. C., and Dickson, E. C.: Experimental therapy in coccidioidal granuloma, J.A.M.A., 106:777, March 7, 1936.

28. Stout, H. A., and Pagano, J. F.: Resistance studies with nystatin, Antibiotics Ann. 1955-1956, p. 704, Medical Encyclopedia, Inc., New York, 1956.

29. Vandeputte, J., Wachtel, J. L., and Stiller, E. T.: Amphotericins A and B antifungal antibiotics produced by a streptomycete: II. The isolation and properties of the crystalline amphotericins, Antibiotics Ann. 1955-1956, p. 587, Medical Encyclopedia, Inc., New York, 1956.

30. Winn, W. A.: The clinical development and management of coccidioidomycosis, Proceedings of Symposium on Coccidioidomycosis, U. S. Public Health Service Bull., N. 575, p. 10, 1957.

31. Winn, W. A.: Diagnosis, medical and surgical treatment of coccidioidomycosis, Paper presented at Fifth International Congress on Diseases of the Chest, Tokyo, Japan, Sept. 8, 1958.

32. Winn, W. A.: The use of amphotericin B in the treatment of coccidioidal disease, Am. J. Med., 27:617, Oct. 1959.

Biliary T-Tube Drainage

A Simple Method

HARRY PERELMAN, *M.D.*, Los Angeles

No fully satisfactory method for draining bile into a collection bottle from a T-tube placed in the common bile duct has yet been presented. If it is large, the drainage tube may be so heavy that it pulls the T-tube out of the common duct or out of the abdominal wound: and sometimes a patient's thrashing about in bed immediately after operation will cause the T-tube to become dislodged. To prevent such an occurrence, some surgeons keep a covering of dressings over the T-tube for a day after operation. Usually the dressings become bile-soaked and irritation of the skin of the abdomen results. Some observers have recommended attaching a small bottle directly to the T-tube and keeping it in place with dressings. With this method, however, bile is likely to spill from the bottle onto the bed as the patient turns from side to side. For several years I have used a simple system that serves well yet avoids the dangers and inconveniences mentioned.

After completion of the operation, the T-tube is attached to a plastic intravenous tubing set such as is ordinarily used to administer fluids. The proximal end of the set is detached by cutting the tube with scissors. The distal end, which has a needle adapter, readily fits into the T-tube (Figure 1). After it is attached to the T-tube, which is fixed to the abdominal wall with either sutures or adhesive strapping, the long intravenous tubing is brought out from beneath the dressings and is allowed to hang over the side of the bed to a collecting bottle. Being both light in weight and long enough to permit the patient a good deal of freedom of motion without drawing it taut, the plastic tubing does not put traction on the T-tube. Even should the patient inadvertently pull directly on the plastic tubing, the traction separates it from the T-tube at the point of attachment. When the patient rises to walk about, the plastic tubing can be coiled and the distal end placed into a small collecting bottle pinned to the abdominal dressing, and when he returns to bed it can be uncoiled and the end put into a drainage bottle at the side of the bed again.

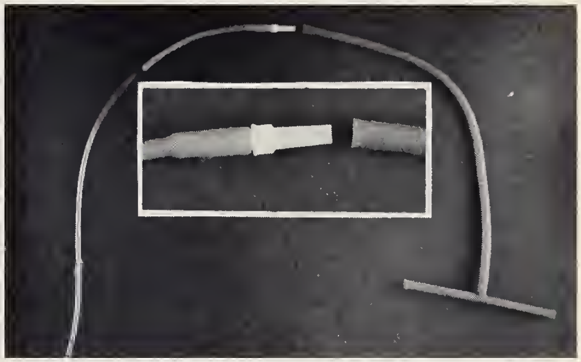

Figure 1.—Plastic intravenous tubing with needle adapter (inset) fits readily into the distal end of T-tube. Tubing photographed (Vacoset V-14) was supplied by Don Baxter, Inc., Glendale.

6010 Wilshire Boulevard, Los Angeles 36.

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Submitted February 23, 1961.

Clinical Experience with Chlorpropamide

GEOFFREY WALKER, *M.D.*, and LAURANCE W. KINSELL, *M.D.*, Oakland

• Seventy-eight patients with mild diabetes were treated with chlorpropamide in doses up to 1 gm. daily. Eight showed primary failure to respond and two showed an initial but not a sustained response. Patients whose diabetes was of recent onset and who had not been treated with insulin or a sulfonylurea, required smaller doses than the remainder except for a group of patients who had been diabetic for more than 15 years.

The average dose for the 64 patients who took chlorpropamide for more than three months was 0.46 gm. per day. Serious side effects were uncommon and disappeared when the drug was stopped. One patient became jaundiced, one had a rash, and one showed granulocytopenia. Changes in liver function tests were seen in 17 out of 56 patients treated for more than three months and were correlated with the dosage of the drug and the duration of treatment.

CHLORPROPAMIDE (1-p-chlorobenzenesulfonyl 3-propylurea) was synthesized by McLamore and coworkers[10] during a systematic search for potent, long-acting, hypoglycemic sulfonylureas that were effective when given by mouth. It is marketed under the trade name of Diabinese.

This paper presents the results of a clinical trial of chlorpropamide conducted in the Diabetic Clinic at the Highland-Alameda County Hospital.

PATIENT SELECTION AND METHODS OF STUDY

Patients were selected for study only if they had noninsulin-dependent diabetes (that is, did not become ketotic when insulin was withheld) and were expected to cooperate in taking the drug and attending for review. They were seen at least once weekly during the first month and then approximately once monthly, depending on the adequacy of diabetic control. After a brief experiment with larger doses it was decided early in the trial to prescribe a standard initial dose of 250 mg. daily. The dose was subsequently adjusted according to postprandial blood sugar levels and the subjective well-being of the patients. The maximum dose was 1 gm. daily. All the patients were asked to take the prescribed amount of the drug once daily, with their breakfast, and to continue the diet they had been following before the trial began. Patients who were taking insulin were started on chlorpropamide, 250 mg. daily and insulin was discontinued after progressively smaller doses for three to four days. Those who were taking other sulfonylureas were changed to chlorpropamide treatment abruptly.

Diabetic control was classified as "good" when postprandial blood sugar was consistently below 150 mg. per 100 ml., as "satisfactory" when consistently between 150 and 200 mg. per 100 ml. and as "unsatisfactory" when above 200 mg. per 100 ml.

Thymol turbidity and serum alkaline phosphatase values were determined and leukocyte counts were done before starting the drug and then approximately once monthly. Urine was tested for glucose, protein and acetone at each visit.

If patients did not keep their appointments, they were reminded by telephone or letter and every effort was made to insure continuity of treatment and supervision.

THE PATIENTS

Seventy-eight patients, 23 men and 55 women, were selected for treatment with chlorpropamide. Their ages varied from 31 to 87 years (mean, 58.3 years) at the time of the study and from 31 to 85 years (mean, 52.5 years) at the time diabetes was diagnosed. Only seven patients were under 40 years of age at the time of the study. The high proportion of patients over 40 years old reflects the predominance of old people receiving county hospital care as well as the increased incidence of this type of diabetes with advancing age. The duration of diabetes varied from three months to 40 years (mean, 5.9 years).

Some patients were overweight and clearly did not follow their prescribed diets. Weights at the beginning of the trial varied from 106 to 256 pounds (mean, 162 pounds).

Forty-four patients had taken insulin at some time. Doses varied from 5 to 90 units daily (mean, 30 units daily). Twenty-nine patients had been treated with tolbutamide and 13 with metahexamide. Seventeen patients had received neither insulin nor a sulfonylurea.

From the Institute for Metabolic Research Highland-Alameda County Hospital, Oakland 6.

Submitted August 22, 1960.

TABLE 1.—*Data on Patients with Primary Failure of Treatment of Diabetes with Chlorpropamide (1 Gm. Daily for at Least One Month)*

Duration of Diabetes (Years)	Age	Response to: Tolbutamide	Metahexamide	Pre-sulfonylurea Insulin Dose (Units per Day)	Initial Weight (Pounds)	Subsequent Therapy	
8	62	PF	PF	20S	222	Diet only	Unsatisfactory
8	74	SF	PF	....	172	D.B.I. 150 mg. per day	Satisfactory
6	49	....	....	45S	118	D.B.I. 100 mg. per day	Satisfactory
10	54	PF	PF	30S	120	D.B.I. 75 mg. per day	Unsatisfactory
7	57	....	....	20S	146		
9	42	PF	....	....	146	D.B.I. 150 mg. per day plus chlorpropamide 250 mg. per day	Satisfactory
3	67	PF	....	40S	155	D.B.I. 150 mg. per day plus chlorpropamide 250 mg. per day.	Satisfactory
3	66	SF	PF	80S	131	N.P.H. 50 units per day insulin	Satisfactory
Mean: 6:8				39.2	151.2		

PF=Primary failure. SF=Secondary failure. S=Satisfactory control.

TABLE 2.—*Data on Patients with Secondary Failure of Treatment of Diabetes with Chlorpropamide*

Duration of Diabetes (Years)	Response to Tolbutamide	Insulin Dose (Units per Day)	Duration of Chlorpropamide Therapy (Months)	Weight in Pounds	
				Initial	Final
16	PF	35S	4	128	118
1	....	22S	6	188	186

PF=Primary failure. S=Satisfactory control.

RESULTS

Initial Response. Seventy of the 78 patients maintained postprandial blood sugar levels consistently lower than 200 mg. per 100 ml. Good diabetic control (postprandial blood sugar consistently below 150 mg. per 100 ml.) was achieved in 58 and satisfactory control (postprandial blood sugar between 150 and 200 mg. per 100 ml.) in 12 patients. The eight patients who had postprandial blood sugar greater than 200 mg. per 100 ml. despite a maximum dose of chlorpropamide of 1 gm. daily for at least one month, were classified as showing primary failure of treatment. Details of this group of patients are given in Table 1.

Withdrawals. Six patients, all diabetically well controlled, were taken off chlorpropamide within one month, four because of serious or troublesome side effects, one because of leaving the district and one because the disease could be controlled by diet alone. Ten patients were taken off the drug despite good control for at least three months: Two of them were grossly obese and gained weight, three were controlled by diet alone, one showed a granulocytopenia, one because of development of gastric ulcer, one refused to continue treatment because of headaches which were no more frequent or severe than before starting it, and two defaulted.

Secondary failure, defined as unsatisfactory diabetic control occurring despite a dose of chlorpropamide of 1 gm. daily in the absence of change in the diet or gain of weight and following a period of good or satisfactory control, was seen in two patients (Table 2).

Dose-response Relationships. Data on the relationship of dosage to response for the 70 patients who showed an initial good or satisfactory response to chlorpropamide are shown in Table 3.

Table 4 gives data on the relationship of dosage to the duration of diabetes for the 68 patients who showed sustained good or satisfactory control. The mean duration of diabetes for the patients who responded to chlorpropamide was 6.7 years as compared with a mean duration of 6.8 years for those who showed primary failure to respond.

COMPARISON OF CHLORPROPAMIDE WITH INSULIN AND WITH OTHER SULFONYLUREAS

Thirty-eight patients who maintained good or satisfactory diabetic control on chlorpropamide had previously been treated with insulin. Twenty-nine were well controlled and nine were satisfactorily controlled on chlorpropamide. The mean insulin requirements for the two groups was 28.1 and 32.2 units per day respectively, and the mean chlorpro-

TABLE 3.—*Results of Chlorpropamide Treatment Related to Whether Patient Had Been Previously Treated with Insulin or Sulfonylurea*

	Good Control					Satisfactory Control					
Dose in Gm. per Day	0.125	0.25	0.50	0.75	1.0	0.125	0.25	0.50	0.75	1.0	Total
Previously treated with insulin and/or sulfonylurea	3	21*	13*	4	1	0	2	1	5	3	53
Not previously treated with insulin or sulfonylurea	5	7	3	1	0	0	0	0	1	0	17
Total	8	28*	16*	5	1	0	2	1	6	3	70

*Including one patient who subsequently showed secondary failure.

TABLE 4.—*Chlorpropamide Dose Related to Duration of Diabetes in Cases of Sustained Good or Satisfactory Control*

	Mean Dose (Gm. per Day)	Number of Patients
Duration of diabetes:		
1 year	0.26	10
1 to 4 years	0.45	23
5 to 9 years	0.49	17
10 to 14 years	0.47	12
15 to 19 years	0.29	3
20 or more years	0.33	3

TABLE 5.—*Comparison of Response to Chlorpropamide and Tolbutamide*

	Response to Chlorpropamide		
Response to Tolbutamide	Good	Satisfactory	Unsatisfactory
Controlled*	11	4	1
Uncontrolled	5	2	6†

*Consistently aglycosuric.
†Including one patient with secondary failure to tolbutamide.

pamide dosage 0.39 and 0.72 gm. per day. The patients who were well controlled on chlorpropamide had an insulin-to-chlorpropamide equivalence ratio of 72 units to 1 gm., while for those who were satisfactorily controlled the ratio was 32 units to 1 gm. The mean insulin requirement of the patients in the primary failure group was 39.2 units daily.

There are insufficient data in the medical records of many of the 29 patients who had been treated with tolbutamide to calculate a valid chlorpropamide-to-tolbutamide potency ratio, and the 13 patients who had received metahexamide took the drug for too short a time to allow a chlorpropamide-to-metahexamide potency ratio to be determined. The relative responses of 29 patients to chlorpropamide and tolbutamide are shown in Table 5. (In compiling the data, it was assumed that patients who were consistently aglycosuric on tolbutamide were "controlled.")

Effect on Weight. Of the 64 patients who showed good or satisfactory response to chlorpropamide for at least three months, 33 gained weight, 27 lost weight and four showed no change of weight. Change of weight is related to chlorpropamide dosage and duration of treatment in Table 6 for patients whose initial weights were above and below the median of 157 pounds.

Effect on Leukocytes and on Liver Function Tests. There was no change in serial leukocyte counts except in one patient who showed granulocytopenia (total count 2,900 per cu. mm., with neutrophils 33 per cent, lymphocytes 63 per cent, monocytes 2 per cent, eosinophils 1 per cent, basophils 1 per cent) which disappeared when the drug was stopped.

Data are available on serial estimations of thymol turbidity and serum alkaline phosphatase for 56 patients who took chlorpropamide for more than three months. Normal values were considered to be 0 to 4 units for thymol turbidity and 1.5 to 4 units (Bodansky) for serum alkaline phosphatase. The changes recorded were relatively minor and are analyzed in Table 7.

SIDE EFFECTS

Anorexia, nausea and abdominal discomfort were experienced by several patients but were not very troublesome and disappeared within a few days of starting treatment in all but two patients who had to be taken off the drug after one month (0.25 gm. per day) and two weeks (0.5 gm. per day) respectively. One patient was found to have a large gastric ulcer after 16 months on 0.25 gm. daily.

Rash. One of the first patients treated with chlorpropamide had received 1 gm. daily for two weeks when she had an itchy, maculopapular rash, chiefly on the trunk, a low grade fever and weakness and ataxia. These symptoms disappeared within a few days of discontinuing the drug. She refused to take a smaller dose and resumed insulin treatment.

Jaundice. A woman aged 55 had been a diabetic for 12 years and was well controlled with N.P.H. insulin, 40 units daily. She was transferred to metahexamide 100 mg. daily on March 29, 1959, and to chlorpropamide 750 mg. daily on June 18, 1959. She was admitted to the hospital on July 27, 1959, with complaints of generalized itching, anorexia and lassitude.

The body temperature was 38.9° Centigrade. There was widespread maculopapular rash on the trunk, and the patient was moderately jaundiced. The liver and spleen were impalpable. Packed cell volume was 40 per cent. Leukocytes numbered 11,500 per cu. mm.—neutrophils 62 per cent, lym-

TABLE 6.—*Relationship of Chlorpropamide Dosage and Duration of Treatment to Weight Change*

	Initial Weight More Than 157 Pounds		Initial Weight Less Than 157 Pounds		
	Lost	Gained	Lost	Gained	Unchanged
No. of patients	12	20	15	13	4
Mean initial weight (pounds)	191	185	138	136	129
Mean weight change (pounds per month)	1.08	0.97	0.88	0.87	....
Mean dose (gm. per day)	0.48	0.44	0.49	0.32	0.44
Per cent well controlled	75	75	73	92	75

TABLE 7.—*Changes in Liver Function Tests During Chlorpropamide Treatment*

	No. Pounds	Elevated Before Treatment		Mean Dose Gm. per Day	Duration of Chlorpropamide Therapy (Months)
		T.T.*	A.P.†		
No change in T.T. or A.P.	39	0	0	0.41	9.6
Increase in T.T. only	9	1	0	0.51	10.9
Increase in A.P. only	5	0	2	0.60	12.0
Increase in both T.T. and A.P.	3	1	2	0.79	13.7

*T.T.=Thymol turbidity. †A.P.=Alkaline phosphatase.

phocytes 24 per cent, monocytes 1 per cent, eosinophils 13 per cent. The icterus index was 40 units. Thymol turbidity was 1.2 units. Cephalin-cholesterol flocculation was negative at 48 hours. Alkaline phosphatase was 60 King-Armstrong units. Blood urea nitrogen was 21 mg. per 100 ml. Liver biopsy showed periportal infiltration with round cells and eosinophils, intracanalicular bile stasis and bile staining of some parenchymal cells.

Chlorpropamide was discontinued and the diabetes was controlled with insulin. The rash spread and desquamated. The jaundice subsided within three weeks and the patient was discharged from the hospital on August 20, 1959. Thymol turbidity and alkaline phosphatase were normal and cephalin-cholesterol flocculation negative one month later. Diabetes was well controlled by 40 units of N.P.H. insulin daily.

Hypoglycemia (a manifestation of overdosage rather than a side effect) was probably experienced in a mild form by three patients. Further episodes were prevented by discontinuing the drug in two patients (each taking only 0.125 gm. daily) and by reducing the dose from 0.25 to 0.125 gm. daily in the other.

Alcohol intolerance was seen in one patient when she was taking chlorpropamide 1 gm. daily. She complained of flushing, palpitation and nausea after drinking amounts of whisky which had previously caused none of these symptoms.

DISCUSSION

Chlorpropamide, like the related sulfonylureas, carbutamide and tolbutamide, has little or no hypoglycemic activity in patients with severe, insulin-dependent, juvenile-type diabetes, occurring either spontaneously[13] or after total pancreatectomy.[11] It is useful in the treatment of many patients with mild, noninsulin-dependent, maturity-onset diabetes. Carbutamide which is excreted relatively slowly and gives a steady plasma level when given once daily is no longer used in this country because it has dangerous side effects.[6] Tolbutamide is remarkably safe but has the disadvantage of being excreted so rapidly that multiple daily dosage is usually necessary to maintain therapeutically adequate plasma levels. The plasma half-lives of tolbutamide and chlorpropamide are 5 and 36 hours respectively.[7] When a fixed dose of chlorpropamide is taken once daily the plasma concentration increases for several days (depending on the dose) and then remains steady.[2] Maintenance of a constant plasma level with a single daily dose is convenient for the patient, unless dosage has been excessive, in which case the slow excretion of the drug becomes a disadvantage.

Tolbutamide and chlorpropamide are equally effective in reducing the blood sugar during acute studies in normal subjects or in patients with mild diabetes[3] but when administered for prolonged periods, chlorpropamide is three to six times as potent as tolbutamide[4] because it is excreted more slowly. There is nothing to suggest any qualitative differences between the modes of action of the two drugs. Some patients are unsatisfactorily controlled on tolbutamide but well or satisfactorily controlled on chlorpropamide (Table 5). This is probably due in most instances to the higher and more sustained plasma sulfonylurea levels achieved with chlorpropamide. A pronounced difference in response to the two drugs suggests negligence in taking multiple daily doses of tolbutamide. One of the patients in the better series was better controlled on tolbutamide than chlorpropamide. Unfortunately, plasma sulfonylurea levels are not available for comparison.

It was possible with several of the patients to decrease the dose of chlorpropamide during the trial without deterioration of diabetic control. When this was done the doses, as shown in the tables, are the mean for the period of treatment, excluding the first month. All the patients in the series who responded to chlorpropamide did so promptly and, unlike Lee and coworkers[8] we did not observe delayed responses such as have been reported with tolbutamide by Walker and coworkers.[15]

It is difficult to assess the significance of changes in weight during the trial. Table 6 shows no relationship to initial weight, to chlorpropamide dosage or to duration of treatment. Although all the patients were asked not to change their diet, some undoubtedly followed their prescribed diets more faithfully when seen so frequently, while others undoubtedly ate more than they should have when they became aglycosuric.

There is no difference in the duration of diabetes in the groups of patients who responded well or satisfactorily and those who showed primary failure to respond. Table 4 shows that patients with diabetes of less than one year duration required less chlorpropamide than the remainder of the patients, with the exception of those who had been diabetic for more than 15 years. The mean age of these latter patients was 66.7 years, compared with 58.3 years for the series as a whole. There is a suggestion of some correlation between previous insulin dosage and response to chlorpropamide. The mean insulin dose was 28 units per day for the patients who were well controlled on chlorpropamide. 32 units per day for those who were satisfactorily controlled and 39 units per day for those who showed primary failure.

The high incidence of side effects, particularly of anorexia, nausea, abdominal discomfort and rashes noted in the early reports on chlorpropamide was due to excessive dosage. Only two of the 78 patients in the present series were unable to tolerate the drug because of abdominal symptoms and one (excluding the patient who also became jaundiced) developed a rash (after taking 1 gm. daily for two weeks).

One of our patients showed granulocytopenia which disappeared when chlorpropamide was stopped. Similar instances have been mentioned by Reyes and coworkers.[13]

Intrahepatic cholestatic jaundice occurred in one of the patients and was probably due to chlorpropamide, although she had taken metahexamide for two months and was transferred to chlorpropamide six weeks before the jaundice appeared. The onset within six weeks of starting the drug and the association with a maculopapular rash are characteristic. Increased serum alkaline phosphatase with little or no change in the flocculation liver function tests, and liver biopsies which show cholestasis and round cell infiltration of the portal areas, indicate an obstructive process. Reduction of prothrombin activity with poor response to vitamin K injections in some cases shows that hepatocellular damage also occurs. Reichel and coworkers[12] expressed belief that this type of jaundice is a result of hypersensitivity to the drug such as is seen with chlorpromazine. They estimated its incidence as approximately 0.5 per cent. Hamff and coworkers[5] were able to resume treatment without recurrence of the jaundice or other symptoms or deterioration of liver function tests in two of three patients who had recovered from chlorpropamide jaundice.

Most of the early reports on relatively short term studies stated that chlorpropamide treatment was not associated with any change in liver function tests, but Burrell[1] mentioned that he had seen transient abnormalities in the thymol turbidity test in 12 of 130 patients who received the drug for one to thirteen months (mean 6.3 months). In the present series the 56 patients for whom we have serial liver function tests were treated for from three to twenty-four months (mean 10.2 months). Thirty-nine showed no change of either thymol turbidity or serum alkaline phosphatase, eight showed an increase of thymol turbidity from the normal range to above the upper limit of normal, five showed a similar increase of serum alkaline phosphatase and one patient with normal baseline values showed an increase beyond the upper limits of normal of both thymol turbidity and serum alkaline phosphatase. Table 7 shows that patients with changes in liver function tests took more chlorpropamide and for longer than those who showed no change and that all of the six patients who showed minor abnormalities of liver function by these tests before treatment showed deterioration during treatment. These observations suggest that further and more detailed studies of the effect of long-term chlorpropamide administration on liver function are indicated.

Three of the patients in this series probably became mildly hypoglycemic. Symptoms were mild, were relieved by food and were abolished by stopping treatment in two cases and by reducing the dose in the other case. We have not seen severe and persistent hypoglycemia after moderate dosage as reported by Lindeman and coworkers.[9]

One of the patients was unable to tolerate alcohol while she was taking 1 gm. of chlorpropamide daily. Chlorpropamide-induced alcohol intolerance has been mentioned by several observers and described in detail by Signorelli and coworkers.[14] The effects resemble those of disulfiram (Antabuse). The mechanism is unknown.

It is the opinion of the authors that chlorpropamide is a highly useful drug. If dosage in excess of 0.5 gm. per day is required, liver and hematologic indices should be checked at intervals during the first year of such treatment.

ACKNOWLEDGMENT

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Institute for Metabolic Research, Highland-Alameda County Hospital, 2701 Fourteenth Avenue, Oakland 6 (Kinsell).

REFERENCES

1. Burrell, Z. L., Martinez, A., and Burrell, L. O.: One year of clinical experience with chlorpropamide in more than one hundred diabetic patients, Ann. N. Y. Acad. Sci., 74:696, 1959.

2. Carlozzi, M., Iezzoni, D. G., and Silver, L.: Blood levels of chlorpropamide in normal men following chronic administration, Ann. N. Y. Acad. Sci., 74:788, 1959.

3. Craig, J. W., Miller, M., Mills, F. D., and Nickerson, N.: A comparison of the acute hypoglycemic potencies of tolbutamide and chlorpropamide, Ann. N. Y. Acad. Sci., 74:618, 1959.

4. Forsham, P. H., Magid, G. J., and Dorosin, D. E.: A clinical comparison of chlorpropamide and tolbutamide, Ann. N. Y. Acad. Sci., 74:672, 1959.

5. Hamff, L. H., Ferris, H. A., Evans, E. C., and Whiteman, H. W.: The effects of tolbutamide and chlorpropamide on patients exhibiting jaundice as a result of previous chlorpropamide therapy, Ann. N. Y. Acad. Sci., 74:820, 1959.

6. Kirtley, W. R.: Occurrence of sensitivity and side reactions following carbutamide, Diabetes, 6:72, 1957.

7. Knauff, R. E., Fajans, S. S., Ramirez, E., and Conn, J. W.: Metabolic studies of chlorpropamide in normal men and in diabetic subjects, Ann. N. Y. Acad. Sci., 74:603, 1959.

8. Lee, C. T., Schless, G. L., and Duncan, G. G.: Clinical experiences with chlorpropamide: A double-blind study, Ann. N. Y. Acad. Sci., 74:738, 1959.

9. Lindeman, R. D.: Severe hypoglycemia caused by chlorpropamide, Diabetes, 9:110, 1960.

10. McLamore, W. M., Fanelli, G. M., P'an, S. Y., and Laubach, G. D.: Hypoglycemic sulfonylureas: Effects of structure on activity, Ann. N. Y. Acad. Sci., 74:443, 1959.

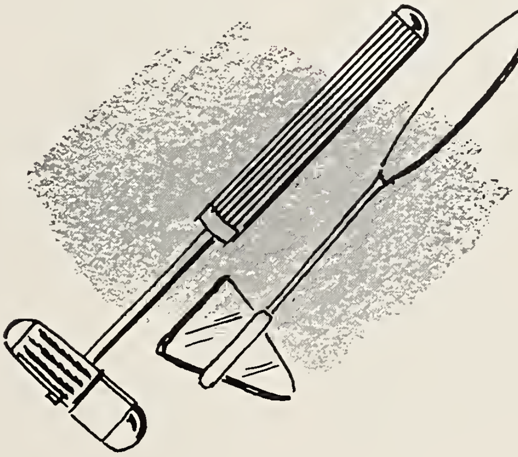
11. Pines, K. L., Leifer, E., and Goodman, D.: Influence of chlorpropamide upon postpancreatectomy and spontaneous diabetes, Ann. N. Y. Acad. Sci., 74:997, 1959.

12. Reichel, J., Goldberg, S. B., Ellenberg, M., and Schaffner, F.: Intrahepatic cholestasis following administration of chlorpropamide, Am. J. Med., 28:654, 1960.

13. Reyes, J. A. G., Pena, J. C., Barroso, E., Anton, F. B. S., and Gonzales, C.: Clinical experience in the use of chlorpropamide in the treatment of diabetes mellitus, Ann. N. Y. Acad. Sci., 74:1012, 1959.

14. Signorelli, S.: Tolerance for alcohol in patients on chlorpropamide, Ann. N. Y. Acad. Sci., 74:900, 1959.

15. Walker, G., Slater, J. D. H., Westlake, E. K., and Nabarro, J. D. N.: Clinical experience with tolbutamide, Brit. Med. J., 1:323, 1957.



From Where We Are to Where We Should Be

BARBARA L. ANDREWS, San Jose
President, California Medical Assistants' Association

It does not take long after one assumes the chairmanship of a local chapter of the California Medical Assistants' Association to realize the potential power within the grasp of this organization. We soon find that to request is to command; to suggest is to influence.

We are cautioned in our installation services to "walk circumspectly," and we must heed this admonition.

You will find the word "club" is not well suited to the medical assistants' associations; rather the longer, but more definitive terms such as "educational" or "professional" organization apply.

This is a dignified, influential, educational professional organization; let no member impeach its dignity, misuse its influence, ignore its educational potential, or fail to respect its professional standing.

It has been comfortable, to this point, to ignore issues which might be a bit controversial, but in so doing we can overlook our responsibilities. And let there be no mistake—we have responsibilities.

We have not been reluctant to recognize our responsibilities to our members; our educational programs have progressed at a speed amazing to behold. But others look to us for guidance, and we must become equal to the task.

Many of our local chapters have already seen the need and encouraged and worked with local schools in establishing preemployment medical assistant training. We soon found that this also involved appearing at local high schools on career recruitment campaigns—and we delighted in the task. The provision of on-the-job training was accepted as a natural "side effect" of these two programs, and furnished with good grace.

Until recently these programs have been without coordination or direction on a state level but, typically, we have begun to exchange ideas and, with the coming Certification program, realize that we must be more unified in our program material.

Now, let's take a look at a responsibility we have, heretofore, not had to face; that of publishing a list of medical assistant courses sponsored or recommended by the medical assistants organizations. Requests for this information have been steadily increasing, and will continue to do so. With the establishment of our Certification program I predict the volume of such queries will accelerate rapidly. We have hesitated to take a stand on any course since this would mean investigating all of them. Is it not time that we do this? Can we deny it is one of our responsibilities? Can we say one of the primary duties of a medical assistant is public relations, then refuse to advise future medical assistants who have turned to us for guidance, letting them find out for themselves that a course in which they have spent much time and money is, essentially, worthless?

Whether we like it or not, this task is coming and, with the advent of Certification, will be needed. We might also recognize that such action on our part would give the schools a standard to which to conform and should, therefore, raise the standards throughout the state and perhaps many of the now poorly functioning "schools" will become valuable tools for education.

While we are at it, let's take a look at Certification, and what it may mean to us. First, it will truly define the term "medical assistant"; it will assist in obtaining for us a definite place on the medical team, recognizable by all persons.

It is estimated that in little more than a decade California will be the most heavily populated state in the Union, with an estimated 10 per cent of the population of the country residing in this state. This, coupled with rising income levels, increasing use of health insurance plans, and improved education of the public will bring about a continuing heavy demand on the health facilities of this state.

It does not take much imagination to see that the physician's skills and time must be implemented to the utmost. The recent report of the Governor's Committee on Medical Aid and Health states: "At every level of skill, health personnel should make maximum possible use of their highest ability. A physician without a nurse or technician is limited as to the number of persons he can see. Proper use . . . [must] . . . be made of allied health personnel."

We, as important members of the health team, must be able to compare our place on that team with our own current worth, and then accept the responsibility of educating ourselves to keep up

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Presidential address at annual meeting of California Medical Assistants' Association, Bakersfield, April 15, 1961.

with the increasing technical, scientific and socioeconomic developments facing us.

It wasn't long ago that a starry-eyed youngster just out of high school could adequately fill the job of a doctor's Girl Friday—many of us started out just that way. But, today we are acutely aware that this is no longer true. Employing such an individual now is, at best, experimental—and could be catastrophic. An increasing array of pharmaceuticals and technical equipment, the complex insurance programs, the public's alert eye to the get-rich-quick malpractice suit and—let's face it—the management of a large business, demand much more than a naive, wide-eyed approach.

This has become a career, the qualifications of which are: Maturity, awareness, learning on the job, evaluation and self-education.

We can see, then, that we must be educated, prepared, and constantly preparing to keep up with our profession. But, in order to do this, it is necessary to find out just what our profession is. The Certification program makes this so simple it is astounding: *This* is a Medical Assistant, and *this* is a Medical Secretary. Now that we know what we are preparing for, we can see what we must seek in the way of education. Not only that, we can show others the way and, thirdly, and perhaps most importantly, the days are limited in which others will ask: "What is a Medical Assistant?" They will *know!*

Lest you falter in your appraisal of the value of an organization such as ours, let me point out to you here, that the report of the Governor's Committee also stated: "Professional associations have shown that effective standards can be maintained." But, as an organization we must first reach a standard *to* maintain. As Doctor Samp said at our national meeting in Chicago, "The purpose of our organization is to take us out of where we are and put us up where we should be."

I would admonish you individually: Compare yourself with the qualifications of the Certification program, and the requirements of your specific job; evaluate your abilities. Know what you don't know—then do something about it!

I have read that "Knowledge comes by taking things apart—analysis, but wisdom comes by putting things together."

Now that we have discussed analysis, let's discuss putting things together. I might best describe the next subject as: The role of the medical assistant in turning the tide against socialized medicine.

It is becoming increasingly evident that the public is beginning to view medical care as a right, and to look upon prepayment, health insurance type plans as an answer to the financing of medical care.

Making these plans function smoothly is the greatest deterrent we have against the advent of socialized medicine. And we—you and I—the doctor's employees, hold the key to making this a smooth-working, effective tool and, more importantly, one the patient understands.

It is up to us to reverse our present attitude towards insurance forms. We must learn to accept them graciously—even eagerly—with an attitude of working *with* the insurance firms; not in spite of them. We must discourage abuse, and be prepared to educate the patients as to the reason insurance plans cannot possibly "cover everything." Do you know the reason for this? If not, it is up to you to find out. You have the wherewithal in your own local groups to obtain excellent speakers on subjects such as these, and I am suggesting it is your duty to recognize the areas wherein you need more information or training; tell your local program chairman, and work with her to obtain speakers of *real* value to you in your work.

During this discussion I have mentioned many potentials of this group; and there are many more to consider. In the vein of what we were just discussing, have you ever considered what a force this membership could be in bringing to bear the firm establishment of a simplified, standardized insurance form? Much work has been done toward this already, but I would like to submit that, with our aid, this could be much more rapidly accomplished.

Potential is a word to dream on; and build on. Henry Ford once said: "The future fairly startles me with its impending greatness. We are on the verge of undreamed progress."

Let us take a look now at the potential of this organization:

It may be very useful to establish a library at the C.M.A.A. office. This could contain copies of articles, books, speeches, and films, all readily available to C.M.A.A. chapters and members. Eventually it would become a center for the compilation and distribution of much reference material.

Surveys of your needs and desires as members of this organization have been, and will continue to be undertaken. These are well utilized to the benefit of our members.

Placement, not only within our own local groups, but of transferee members has become a very real and valuable part of our service.

You are already aware that one pharmaceutical house has produced a film designed for our use. They are currently planning to make another one on a subject of our choice. This, of course, is being done on a national level. Also being prepared on a national level is recruitment material—very timely for use by a state that is so rapidly advancing in the preemployment education programs.

We will, because of our national affiliation, be eligible to participate in the excellent Maxine Williams Scholarship Fund.

The exchange of information between members, chapters, states, the C.M.A.A. and A.A.M.A. cannot possibly be evaluated monetarily. This is one place where the word "priceless" takes on real meaning.

Our potential as an adjunct to the Civil Defense program is astounding; and our members are not apathetic! We are concerned that in many areas we are not recognized at our true value to this program. However, that need not deter us. Let us become organized within our local chapters, let every member take a first aid course and be prepared—and when the time comes that we are needed we will be on the spot with what is needed—just as we are daily in our offices.

Recognition is important to us in another area, and this is recognition by the physicians. We are rapidly accelerating and implementing our news coverage and public relations programs—as I'm sure you have already noted. It is my hope that this organization will obtain, and continue to secure representation at each C.M.A. meeting. Although we were not successful in doing that this year, we plan to do it in the future. In the meantime, we are going to make every effort to acquaint each doctor in the state of California with the California Medical Assistants' Association and what it stands for!

However, let us consider something our organization does not stand for. Let us state it loudly and clearly. *We are not interested in collective bargaining for the medical assistant.*

Let us go a little further than our by-laws and discuss why we feel this way:

Just as the doctor does not want a third party interjected between himself and his patient, we do not want a third party in our employer-employee relationship. When an employer treats us well, we know it is because he wants to, not because he was told to. If we are unhappy in our employment situations it is up to us individually to set this aright. Each of us knows that a *good* medical assistant is never long out of work. We consider ourselves professional persons, and collective bargaining is not compatible with this status.

I would be willing to venture that those medical assistants who are members of this organization are among the best compensated in the state. Notice I said "best compensated"; because compensation need not all be monetary. "Thank you" goes a long way—whatever form it takes. We seek medical assisting jobs because we have found a very satisfying life's work; we belong to this organization because it enhances and enriches our careers—indeed I have met several members who, having been discouraged because of a disillusioning work experience have, nevertheless, stayed in the medical assisting field *because* of the medical assisting organization. This is an important point to consider.

Last year in a statistical course I learned that if one is going to investigate a statement or premise, such as "smoking causes cancer," he must also investigate the reverse; that is: "cancer causes smoking." This is to eliminate bias.

Therefore, let us ask those who doubt us and say we are likely to become a union to give serious thought to this statement: Members of the C.M.A.A. are those persons *least* likely to join a union. Being every bit as individualistic as our employers, we neither need, nor want one!

Let me leave you with this bit of inspiration from Dean Alfange:

> I do not choose to be a common man.
> It is my right to be uncommon—if I can.
> I seek opportunity—not security.
> I do not wish to be a kept citizen, humble and dulled by having the state look after me.
> I want to take the calculated risk; to dream and to build, to fail and to succeed.
> I refuse to barter incentive for a dole.
> I prefer the challenges of life to the guaranteed existence; the thrill of fulfillment to the stale calm of Utopia.
> I will not trade freedom for beneficence, nor my dignity for a handout.
> I will never cower before any master nor bend to any threat.
> It is my heritage to stand erect, proud and unafraid; to think and act for myself; enjoy the benefits of my creations and to face the world boldly and say,
> "This I have done."

693 Sutter Street, Suite 205, San Francisco 2.

Cirrhosis of the Liver

Clinical Course in 2,377 Patients at San Francisco General Hospital

F. WILLIAM BLAISDELL, *M.D.*, and ROY COHN, *M.D.*, San Francisco

KNOWLEDGE of the natural history of Laennec's cirrhosis is necessary in the evaluation and selection of patients with portal hypertension for decompressive operation.[3] The incidence of cirrhosis of the liver in which gastrointestinal bleeding occurs should be well documented and the significance of bleeding as a cause of death in cirrhosis should be known. To help in evaluation of surgical treatment, records of the clinical course of patients who have survived one or more episodes of gastrointestinal bleeding should be available for comparison with corresponding data on patients who have had decompressive operations. While there are good series already reported in the literature,* many of them are reports from the preantibiotic era and most do not classify the cases according to operability or severity of the cirrhosis.

In a previous study of the natural history of the disease in a special group of good risk patients following the first massive hemorrhage, the records of 2,377 cirrhotics admitted to San Francisco General Hospital during the years 1947-1957 were reviewed.[4] Now additional data on the natural history of the disease in this group as a whole are herein reported. The presenting symptom was noted as was the cause of death in 1,054 cases during this period. The incidence of gastrointestinal hemorrhage is recorded as well as the survival rates following the first and subsequent hemorrhages. The survival of the entire group of gastrointestinal bleeders was compared with that of the previously reported group who represented good risk candidates for surgical operation.

In the ten-year period under study there were 4,159 admissions of patients with a clinical diagnosis of Laennec's cirrhosis. The total was made up of 2.776 admissions primarily for cirrhosis or complications thereof, 515 for alcoholism with an incidental diagnosis of cirrhosis, and 869 for other reasons (heart disease, tuberculosis, infections) with cirrhosis as a secondary diagnosis.

• The records of 2,377 patients with Laennec's cirrhosis were reviewed for the period 1947-1957. The chief presenting symptom was ascites in 46 per cent, bleeding in 23 per cent, coma in 18 per cent, jaundice in 9 per cent, and both jaundice and ascites in 4 per cent. Nearly half of the patients died during the period under study—one-third from hepatic failure, one-third from gastrointestinal bleeding, and one-third from other causes, most of which were related to alcoholism.

Massive gastrointestinal bleeding occurred in 21 per cent of the patients at some time in their clinical course, and in the 10 per cent of these in whom ulcer was demonstrated, one-fifth died as a result of the hemorrhage. Of those presumed to be bleeding from esophageal varices, 64 per cent died at the first hemorrhage and 10 per cent at subsequent hemorrhages; 85 per cent of all those who bled from varices were dead at the end of one year, and 91 per cent were dead at the end of three years.

The survival curve of a group of patients who bled once and were good operative risks but had received no operative treatment was compared to the survival curve for entire group who survived the first hemorrhage. The three-year survival in the good risk group was 47 per cent; for the group as a whole it was 30 per cent. The difference in mortality rate was primarily due to an increased number of deaths from hepatic failure in the combined group, whereas 60 per cent of the good risk group died of recurrent gastrointestinal hemorrhage.

As 86 per cent of those who were to die of gastrointestinal bleeding did so at the first hemorrhage, it was concluded that any decided improvement in the salvage rate achievable by operation must come from some means of diagnostic forecast of the likelihood of bleeding, with resort to prophylactic operation in such cases.

The diagnosis was made clinically on the basis of the presence of a palpable nodular liver, jaundice or ascites, a history of cirrhosis, abnormal liver function studies and almost universal evidence of alcoholism. In many instances the diagnosis was confirmed by needle biopsy of the liver, by surgical operation or by autopsy.

The chief presenting symptoms in patients admitted because of cirrhosis were ascites in 46 per cent, bleeding in 23 per cent, coma in 18 per cent, jaundice in 9 per cent, and both ascites and jaundice

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From the Stanford University Surgical Service and the San Francisco General Hospital Unit of the Department of Public Health, San Francisco 10.

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*References 1, 4, 5, 6, 9, 10.

TABLE 1.—*Cause of Death in 1,054 Patients with Cirrhosis of the Liver*

Cause	Total No.	Total Per Cent	Autopsy No.	Autopsy Per Cent
Hepatic failure	433	41	175	36
G-I bleeding	338	32	149	30
Miscellaneous	283	27	165	34
Trauma			36	7
Heart disease			19	4
Infection			17	3
Tuberculosis			16	
Malignancy			14	
Hepatoma			11	
Cerebrovascular accident			11	
Peptic ulcer			8	
Renal failure			8	
Paracentesis complications			7	
Pancreatitis			5	
Poisoning			3	
Beriberi			2	
Other			8	

in 4 per cent. Abdominal pain was rarely the chief complaint or reason for admission.

Nearly 50 per cent (1,054) of the patients died during the period under study and in 46 per cent of the cases the cause of death was verified by autopsy (Table 1). Hepatic failure was the cause of death in over one-third, gastrointestinal bleeding accounted for one-third, and other causes nearly one-third. Infections were not responsible for as many deaths (only 3 per cent of cases in which autopsy was done) in the present study as has been reported by other investigators,[5,6,11] perhaps due to the advent of antibiotics since those earlier reports.

Two-thirds of the deaths in the miscellaneous group would be considered to be directly related to alcoholism, malnutrition or cirrhosis, being due to such things as trauma, pneumonia, tuberculosis, infections and beriberi. There were seven deaths as a result of paracentesis complications (from hemorrhage and peritonitis) but it is of interest that there were no fatal complications from needle biopsy of the liver, which was used frequently to confirm the clinical diagnosis.

Of the 2,377 patients, 507 (21 per cent) had a major gastrointestinal hemorrhage during the period under study. In 51 patients (10 per cent) peptic ulcer was thought to be the cause of the bleeding, with verification by gastrointestinal x-ray examination, surgical operation or autopsy. Eleven of the patients with bleeding ulcer and cirrhosis died as a result of the hemorrhage, a 22 per cent mortality in this group.

The remaining 456 patients were presumed to have esophageal varices. This diagnosis was made by demonstrating varices by x-ray study, esophagoscopic examination, surgical operation or autopsy, by response to balloon tamponade or by exclusion of other possible causes of bleeding. Sixty-four per cent of those with esophageal varices died as a direct result of the first hemorrhage, 7 per cent at the second hemorrhage and 3 per cent at subsequent hemorrhages. Hence, of those who were to die as a result of bleeding, 86 per cent did so at the first hemorrhage. Of the entire group of patients who had hemorrhage, 85 per cent were dead at the end of one year, and only 9 per cent of the entire group were alive at the end of three years (Chart 1).

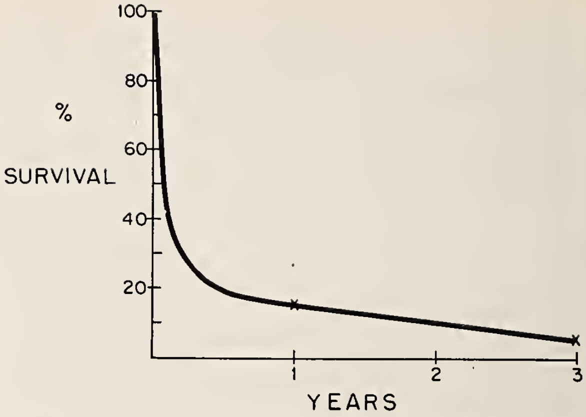


Chart 1.—Overall survival of patients with cirrhosis who had bleeding.

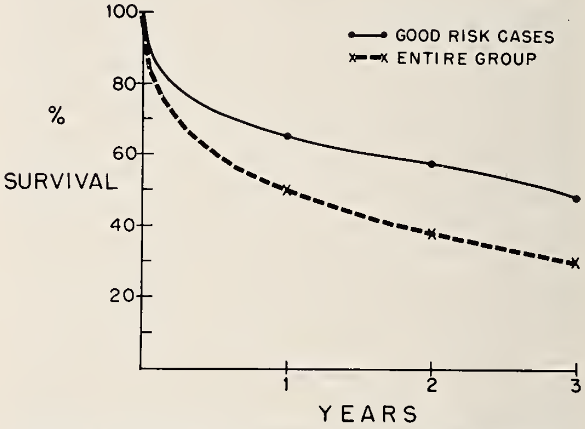


Chart 2.—Survival of patients with cirrhosis who survived the first hemorrhage.

In the group of 166 patients who survived the first episode of bleeding, 62 (40 per cent) had proven varices and met Linton's criteria of operability.[8] Of these, 22 underwent definitive operations. We were able to keep track of 36 of the 40 not operated on, and their survival rate was reported in a previous paper.[4] It is possible to chart the survival of 35 of these plus one in the previous lost group of four for a period of three years from the first major hemorrhage. This can be compared with the survival curve of the entire group of patients with hepatic cirrhosis who survived the first hemorrhage, dating from the onset of this first hemorrhage (Chart 2). In the good risk group, 65 per cent were alive at the end of one year, 58 per cent at two years and 47 per cent at three years. In the group of bleeders as a whole, 51 per cent were alive at the end of one year, 38 per cent at two years and 30 per cent at three years. Of the 23 patients in the good risk group who died during this period, 14 (60 per cent) died of gastrointestinal hemorrhage, and two died of hepatic failure.

DISCUSSION

That gastrointestinal bleeding is a significant cause of morbidity and mortality in Laennec's cirrhosis was underlined in this study. Bleeding was the chief complaint of 23 per cent of the patients with cirrhosis admitted to San Francisco General Hospital in the period under study. There was a 10 per cent incidence of peptic ulcer as the cause of the bleeding in this series. This is similar to that of other observers: Swisher[13] reported a 13.9 per cent incidence in his series, and in summarizing the reports in the literature he noted a 1.8 per cent to 25 per cent incidence, with an average of 9 per cent, in patients with cirrhosis. The mortality of 22 per cent of the patients in the present series who had bleeding ulcer is similar to the 20 per cent reported by Lipp and Lipsitz.[9]

Hemorrhage was the cause of death in nearly one-third of the patients who died during this period. It was even a more significant cause of death in the better risk group of patients. The cause of death for the entire group (regardless of whether autopsy was done) is given, as well as separate data for the autopsy group alone, because of Wallach's[15] observation that there was considerable disparity between clinical and autopsy series as to cause of death. The cause of death in Wallach's and other large series was compared (Table 2) and our autopsy series was in closest agreement with Wallach's combined clinical series.

TABLE 2.—*Incidence of Various Causes of Death in Present Series Compared with Series Reported by Other Investigators*

Cause of Death	Wallach[15] Autopsy	Wallach[15] Clinical	Ratnoff[11] and Patek	Chase[2] et al.	SFGH Autopsy
1. Hepatic failure	17%	30%	32%	44%	36%
2. G. I. bleeding	21%	28%	22%	38%	30%
3. Infections	20%	15%	17%	9%	3%
Number of cases	300	603	213	66	489

The survival curve (Chart 2) for the good surgical risk group was compared with that of the entire group of patients with cirrhosis who survived the first hemorrhage. We believe that the survival curve for good surgical risks is the one that should be used to compare with survival curves of patients undergoing shunting procedures, for many of the other patients in the group would never have been considered operable. In fact, the difference in survival at three years (47 per cent in the good risk group versus 30 per cent in the combined group) was primarily due to an increase in deaths from hepatic failure rather than from gastrointestinal hemorrhage in the combined group. In the good risk group surviving the first hemorrhage, another major bleeding episode accounted for 60 per cent of the deaths in the three year follow-up,[4] whereas fewer than 10 per cent of the deaths were due to hepatic failure.

There are many problems in attempting to determine the effect of operation on the prolongation of life and the prevention of hemorrhage in cirrhosis. Among them is the difficulty in following alcoholic patients as well as the variations in the clinical pattern of the disease in different institutions. Our findings of a 21 per cent incidence of gastrointestinal hemorrhage in this ten-year period is generally similar to other groups (Table 3). However, mortality from the first hemorrhage varies considerably. The 64 per cent mortality from the first hemorrhage in the present series is similar to that of Nachlas,[10] who reported a 60 per cent mortality at the Boston City Hospital, while Sheehy[12] at the Brooke Army Hospital reported 35 per cent. These are undoubtedly accurate reflections of the death rate in the respective types of patients treated (indigent versus Army personnel). Mortality in bleeding varices in the first year is high in all series. It varied from 50 per cent to 85 per cent (Table 3). This high mortality from gastrointestinal bleeding in patients with cirrhosis of the liver is used as an argument in favor of shunting procedures, and the mortality in the present series—85 per cent in the first year following the first massive

TABLE 3.—*Data on Incidence of Gastrointestinal Bleeding and Mortality Rates in Various Series of Patients with Hepatic Cirrhosis*

	SFGH	Boston City[10]	New York Hospitals[11]	Indiana V.A.[14]	Hines V.A.[1]	Mayo Clinic[5]	Brooke Army[12]
Incidence bleeding in cirrhosis	21%	....	27%	32%	....	16%	....
Mortality from first hemorrhage	64%	59%	33%	50%	48%	....	35%
Mortality in G-I bleeders at 1 year	85%	72%	70%	69%	75%	50%	52%

bleeding—can be so used. Actually however, unless operation were done before hemorrhage occurred or were highly successful if done immediately after the onset of hemorrhage, these drastic mortality figures would not be affected appreciably, as 64 per cent of those bleeding massively died at the time of the first hemorrhage—making up 86 per cent of those who were to die of gastrointestinal hemorrhage on this or subsequent bleeding episodes. Of 456 patients presumably bleeding from varices, only 62 of the 166 survivors of the first hemorrhage appeared to be reasonable risks for shunting procedures.

The problem in salvage of patients with cirrhosis who have bleeding varices insofar as surgical decompression of the portal tree is concerned would seem to lie in prevention of the first hemorrhage, as mortality figures will not be altered very much unless hemorrhage is prevented or a much more effective treatment of hemorrhage is devised. Thus it would seem that operation could most effectively be applied if it were possible to predict which of the patients would have gastrointestinal bleeding. We have tried esophagoscopy, routine x-ray study of the gastrointestinal tract for varices and, at present, even routine determination of splenic pulp pressures in an attempt to predict which patients are apt to bleed, but as yet we have been unable to do so. The answer is certainly not an operation on all patients with hepatic cirrhosis, as in San Francisco it would prove to be an overwhelming task and theoretically would not be of benefit to more than one-fifth of the entire group.

Veterans Administration Hospital, 42nd Avenue and Clement Street, San Francisco 21 (Blaisdell).

REFERENCES

1. Baker, L. A., Smith, C., and Lieberman, G.: Natural history of esophageal varices, Am. J. Med., 26:228-237, 1959.

2. Chase, G., Martel, C., and Olivetti, R.: Analysis of the cause of death in Laennec's cirrhosis, Am. J. Med. Sci., 233:259-263, 1957.

3. Child, C. G., III: The portal circulation, N.E.J.M., 252:837-850, May 19, 1955.

4. Cohn, R., and Blaisdell, F. W.: The natural history of patients with cirrhosis of the liver with esophageal varices following the first massive hemorrhage, S. G. & O., 106: 699-701, 1958.

5. Douglas, B. E., and Snell, A. M.: Portal cirrhosis—An analysis of 444 cases with notes on the modern methods of treatment, Gastroent., 15:407-425, 1950.

6. Hallenbeck, G. A., Comess, M. S., Wollaeger, E. E., and Gage, R. P.: Bleeding varices due to cirrhosis, Arch. Surg., 78:774-784, 1959.

7. Henrikson, E. C.: Cirrhosis of the liver—With special reference to the surgical aspects, Arch. Surg., 32:413-451, 1936.

8. Linton, R. L.: The selection of patients for portocaval shunt, Ann. Surg., 134:433-443, 1951.

9. Lipp, W. F., and Lipsitz, M. H.: The clinical significance of the coexistence of peptic ulcer and portal cirrhosis with special reference to the problem of massive hemorrhage, Gastroent., 22:181-189, 1952.

10. Nachlas, M. M., O'Neil, J. E., and Campbell, A. J. A.: The life history of patients with cirrhosis of the liver and bleeding esophageal varices, Ann. Surg., 141:10-23, 1951.

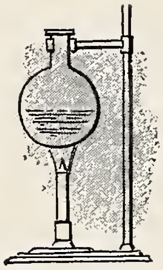
11. Ratnoff, O., and Patek, A., Jr.: The natural history of Laennec's cirrhosis of the liver—An analysis of 386 cases, Med., 21:207-268, 1942.

12. Sheehy, T. W.: Relation of hemorrhage from varices to mortality in cirrhosis, Am. J. Dig. Dis., 2:195-209, 1957.

13. Swisher, W. P., Baker, L. A., and Bennett, H. D.: Peptic ulcer in Laennec's cirrhosis, Am. J. of Dig. Dis., 22: 291-294, 1955.

14. Taylor, F. W., and Jontz, J. G.: Cirrhosis with hemorrhage, Arch. Surg., 78:786-790, 1959.

15. Wallach, J. B., Hyman, W., and Angrist, A. A.: Causes of death in patients with Laennec's cirrhosis, Am. J. Med. Sci., 234:56-61, 1957



Cushing's Syndrome

ALLAN B. WILKINSON, *M.D.*, Glendale

• Sixteen cases of verified Cushing's syndrome, and twelve cases of probable Cushing's syndrome were reviewed and data on them were compared with various reports on Cushing's syndrome in the literature.

The diagnosis hinges upon a high index of suspicion, and one or several of the major criteria may be lacking.

Ultimate establishment of correct diagnosis should be based largely on the clinical features, although stimulation and suppression tests may help to confirm a clinical diagnosis.

In well-established clinical cases, with borderline laboratory confirmation, exploration may be justified, especially if tests fail to identify a specific cause.

In cases of adrenal cortical tumor, all pathological tissue should be removed if possible, with great care to support and stimulate the remaining atrophic adrenal gland during and following operation.

In cases of bilateral adrenal cortical hyperplasia, the problem is one of how much to remove. At present most investigators advocate radical subtotal resection, leaving less than 10 per cent of one side.

In a study of cases of Cushing's syndrome at the Los Angeles County General Hospital for the period 1949-1958, it soon became apparent that diagnosis and management, as yet not standardized, had changed considerably during this period. Newer diagnostic procedures, and availability of specific hormonal replacement therapy both aid in early decisions regarding care of individual patients and eliminate the hopelessness which the diagnosis of Cushing's syndrome formerly conveyed; but these changes have developed so rapidly that the previous ultraconservative approach persists.

Since the brilliant observations of this symptom complex by Cushing in 1912,[6] and his case reports of "pituitary basophilism" in 1932,[7,8] new concepts have arisen. It is interesting to note that in a recent paper in the *Chinese Medical Journal*, Wu and Wang give prior credit to Itsenko, stating that in 1925 he had pointed out changes in the mesencephalon, pituitary and adrenals associated with the syndrome.[34] They called the condition Itsenko-Cushing disease. Despite reports of cases in which the syndrome was associated with adrenal disease, it was long felt to be primary in the pituitary. Present-day observers have come to accept the adrenals as the primary source of the steroid hormones that produce the syndrome, whereas Cushing's disease is the term used to indicate those cases in which adrenal hyperfunction appears to be secondary to basophilic changes of the pituitary. Many cases of the syndrome have now been reported in which no evidence of pituitary disease can be found; which do not respond to the destruction or suppression of the pituitary, but respond to adequate ablation of the adrenal cortex. It is well known that both corticotropin and adrenal steroids can produce the syndrome[29] (acquired Cushing's syndrome).

Whether the process is initiated in the hypothalamus, the pituitary or the adrenal cortex may be controversial, but there is now no doubt that the symptoms and signs in a given patient are due to adrenal cortical hyperfunction, and in this communication the latter term is used to indicate Cushing's syndrome.

The case records of 125 patients at the Los Angeles County General Hospital in whom Cushing's disease or syndrome had been considered during the ten years 1949-1958 were reviewed, plus the records of two privately managed patients. No case was accepted as one of verified adrenal cortical hyperfunction unless microscopic confirmation was obtained. There were 16 cases so verified. Microscopic examination of the pituitary was performed in all autopsied cases. In twelve additional cases many of the clinical stigmata of this syndrome as well as extensive laboratory confirmation were present, but neither surgical exploration nor autopsy was carried out. These were classified as probable cases of hyperfunction. The remaining 99 cases were not included in this review because they were either cases of acquired Cushing's syndrome or related endocrine disturbances, or were misdiagnosed.

DIAGNOSIS

The syndrome of adrenal cortical hyperfunction varies greatly in severity and clinical manifestations. It is progressive, disabling and usually fatal in from two to fifteen years.[31] Since if not treated the disease progresses slowly and inexorably to death from hypertension, infection or neoplasm, the urgency of early recognition and adequate surgical management is obvious. The more rapidly developing cases

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TABLE 1.—*Incidence of Diagnostic Criteria for Cushing's Syndrome in Verified Cases and Probable Cases in Present Series, and in Two Previously Reported Series*

	Present Series		Previous Series	
Symptoms and Signs	16 Cases (Verified)	12 Cases (Probable)	Plotz[24]	Glenn[10]
Weight gain	100%	91%	97%	59%
Change of appearance	100	75	....	78
Weakness or muscle wasting	80	83	50	81
Diabetes	80	50	....	84
Hypertension	80	58	85	66
Skin changes	80	91	71	72
Altered sex function	74	42	71	80
Edema	74	58	28	....
Repeated infection and poor healing	68	58	30	....
Hirsutism	62	75	69	78
Osteoporosis	62	25	....	44
Psychic disturbances	50	50	31-67	59
Elevated urinary steroids	86	67	....	86

are more likely to be due to adrenal cortical malignant disease. The fact that the average case is diagnosed in the fourth decade of life stresses the need for consideration of this diagnosis in the younger hypertensive patients.

The average age of patients with Cushing's syndrome in this series was 34 years. The youngest patient was 19 and the oldest 63. There were 13 women and three men in the group with verified disease, comprising ten Caucasians, three Negroes and three Mexicans. The group of probable cases duplicated these proportions and ages.

This review confirms the paramount relation between symptomatology and final diagnosis, despite missing factors and unpredictable laboratory findings. Adrenal cortical hyperfunction is characterized by well-established symptoms and signs, yet is confusing in that few of these components are constant. Table 1 indicates the relative frequency of various findings in both the proven and probable cases in the present series as compared with two previously reported series. Although it is noted that hypertension, diabetes, weakness and skin changes occur frequently, these symptoms are not essential to diagnosis, whereas centripetal obesity and changes of appearance occurred consistently in the proven cases in the present series and rank high in frequency in others. Somewhat less frequent but striking manifestations of the syndrome are hirsutism, altered sex function, osteoporosis, edema, psychic disturbances and repeated infections. Presenting complaints arising from hydradenitis suppurativa, acne and keratosis pillaris have been noted in many cases. Aside from change of appearance, profound weakness ranks high in importance to the patient (see Figure 1).

After careful comparison of the incidence of manifestations in proven cases with the incidence in suspected cases, one may attempt to draw some conclusions. Diabetes does not occur consistently, and when found may be very mild, indicated only by alteration in the glucose tolerance curve. Osteoporosis occurs even less frequently, or later in the disease. Amenorrhea, loss of libido and impotence are also less frequent manifestations and may occur late. These manifestations, any of which might cause a patient to consult a physician, are less frequent in patients who are not surgically treated, the infrequency perhaps explaining why the disease does not come to medical attention, diagnosis and operation.

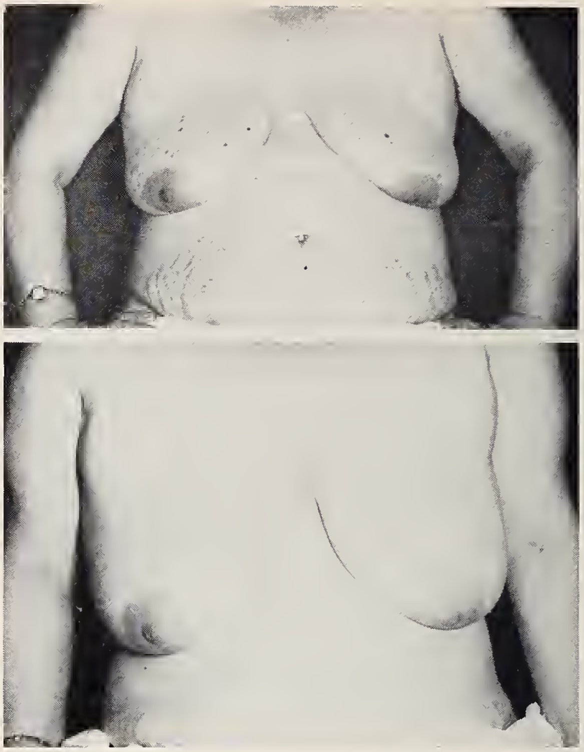

Figure 1.—Pre- and postoperative appearance in a case of adrenal cortical hyperfunction. Note fading of striae, fading of flush, and disappearance of acne and keratosis. Loss of weight and disappearance of edema also occurred, with reduction of blood pressure from 190/115 to 150/95 mm. of mercury.

The poor operative results in the days before adequate replacement hormones became available resulted in an attitude of reluctance to resort to surgical exploration, an attitude that remains even today. In several cases in the present study in which operation was not done, there now would seem to have been sufficient clinical and laboratory evidence to justify exploration.

In both the proven and the unproven groups of cases, psychic disturbances, involving half the patients, caused major problems in both diagnosis and treatment. Among the verified cases, two patients could not have completion of treatment due to major psychosis, and in two cases death was closely related to psychotic behavior—in one case between operative stages and in the other after apparently adequate adrenalectomy. This problem has also been recognized in the psychiatric literature.[23]

LABORATORY CONFIRMATION

The diagnosis is reasonably confirmed by determining the levels of adrenal cortical steroids in plasma and of their metabolites in urine, the latter being much more practical. The complex group of steroid molecules isolated are of two principal types: The androgens, or 17-ketosteroids, and the glucocorticoids, or 17-ketogenic steroids.[11,26] Levels of these substances to be expected in various categories have been described in detail.* In the proven cases in the present study, they were elevated in all patients, with the possible exception of two who died before tests could be done. Studies were done many times in each of the unverified cases, and were elevated on one or more occasions in 67 per cent of them: Often in cases that appear clinically to be adrenal cortical hyperfunction and in which urinary steroids are elevated, an attempt is made to determine which of several basic pathologic changes may be the cause by stimulating steroid output with corticotropin.† The basic premise follows: Hyperplastic adrenals stimulated by giving corticotropin (ACTH) intravenously may produce even higher steroid levels; if the overactivity is due to adenoma, only slight to moderate increase in steroid production may be anticipated; if adrenal cortical carcinoma is the cause of the syndrome, steroid production is at a maximum, and there should be no further response to stimulation. In some of the cases tested thus in this series, as in others, the results were inconclusive. In one case, the 17-ketosteroids responded to ACTH in the range expected of hyperplasia (30.8 mg. to 53.5 mg.), whereas the 17-ketogenic steroid response was very slight, as in the range of adenoma or even carcinoma (53.2 mg. to 58.9 mg.). At operation, this patient was found to have nodular hyperplasia of the adrenal cortices. In another case, response was in the range expected for hyperplasia (29 mg. to 73 mg.), yet the patient had a well-encapsulated adenoma consisting of both zona glomerulosa and zona fasciculata elements. In yet another case, mixed adenoma and cortical hyperplasia were found after stimulation response had been high. As in some other series, the suppression test, using 9-alpha-fluorohydrocortisone, was inconclusive when tried.[13] Contradictory findings tend to reinforce the opinion that accurate differentiation of the underlying pathologic process can best be obtained by surgical exploration.

Blood chemistry studies were done routinely. Hypokalemia or hypernatremia were found in some of the more seriously ill patients. Results of glucose tolerance tests done on most cases ranged from normal in three to varying alterations in the curve in the others, with very severe diabetes in three. Polycythemia, lymphopenia and eosinopenia were inconstant findings.

Corroborative x-ray studies were done on all patients who were well enough to be examined. As anticipated, skull and sella turcica studies showed no abnormality (except for osteoporotic changes in the sella in some cases) because even when pituitary basophilic adenomata are found, they are not large tumors. As in other recent studies, intravenous pyelograms, air contrast studies,[4] and other special studies were of some help in diagnosis when a large adrenal tumor was present, although in one case inconclusive evidence of tumor led to exploration of the wrong side first.

THERAPY AND RESULTS

Recent trends back to Cushing's original concept, postulating a corticotropin-potentiating hormone from the pituitary or hypothalamus.[14,17] are reinforced by the remissions obtained after irradiation or electrodesiccation of the pituitary in 25 to 30 per cent of patients so treated. The present series included three cases in which adrenal operation was ultimately required after transient remission had followed pituitary irradiation.

Walter (cited by Glenn and Horwith[10]) discussed direct attack on the adrenals in a case reported in 1923, in which an adrenal cortical carcinoma was removed resulting in death due to atrophy[20] of the remaining adrenal. In 1933 Naffziger (cited by Glenn and Horwith[10]) described the first case in which operation was successful: Remission for a year after hypophysectomy, and then a second improvement after partial adrenalectomy. The earliest adrenal resection for Cushing's syndrome among patients in the present series was successfully carried out in 1934, with recurrence developing in later years.

Adrenal operations were done on 13 patients in this series. Successful results with at least partial relief from major signs and symptoms occurred in seven. Of these, two completed pregnancy with some replacement therapy; two required maintenance therapy and three required supplemental therapy during illness. As previously described, normotension occurred in less than one-half of the otherwise favorable results, although reduction of blood pressure occurred in all.[18,30] One 34-year-old man at the time of the present report had been in remission for three years after bilateral subtotal resection, with reduction of blood pressure, return of strength, loss of weight and improved sexual function. After subtotal resection (90 per cent) of one of the adrenals, which were very hyperplastic (11 gm. and 16 gm., respectively), he did not desire total adrenalectomy of the second side. Since we could not be sure of the blood supply of the remnant of the first side, we could not insist on total ablation of the second side. This intelligent patient preferred to face the possibility of a third operative procedure than to have replacement therapy for the remainder of his life. Hence, approximately 90 per cent of the second side was removed. After good remission of two years, this patient was having trouble with recurrent infections at the time of this report, with some return of facial edema, although urinary steroids were not elevated as yet.* Newer studies for diurnal changes in plasma steroid levels may be useful.[31]

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*References 9, 13, 19, 21, 28, 32, 33.

†References 2, 13, 16, 18, 19, 21, 22, 27, 28.

Of the remaining six cases in which operation was done, two died of cortical carcinoma; one, with persistent depression and diabetes, died of insulin shock at home; one died of cardiac arrest during closure of the second side (in the "presteroid" period); and two have had remission and exacerbations under medical management, following removal of one adrenal gland, but operation on the other side has been postponed, partially because of psychic disturbances.

Three patients were too ill for operation on admission, although psychotic behavior in one of them prevented a second operation after the first stage had been done elsewhere. These patients had been under study for long periods, elsewhere, for hypertension and diabetes.

Therapy must be based upon symptoms, signs and laboratory confirmation. If results of some of the more complicated laboratory procedures are contradictory, prolonged disability and death may be averted by early surgical exploration. If a tumor is found, it should be completely removed if possible, with careful replacement therapy, since the remaining gland may be atrophic. If hyperplastic cortex is found, less than 10 per cent of one side should be left in situ; and replacement therapy is then needed for only a short time. Those who advocate total removal must accept much greater problems in care for life, and even problems with secondary development of pituitary tumors, and major problems of pigmentation.[10] Many believe that the patient's endogenous hormones will carry him through better than can exogenous supplements.

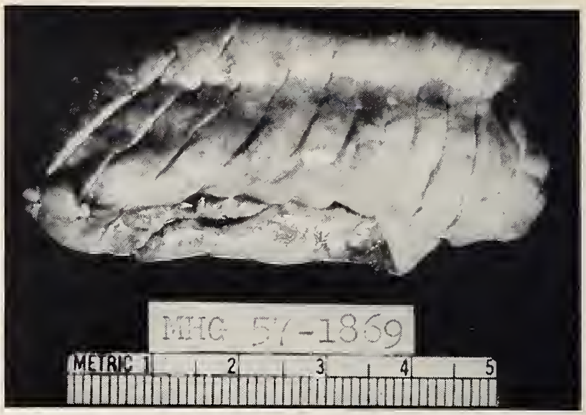

Figure 2.—Gross specimen: 90 per cent of one adrenal (left) showing "nodular-hyperplasia."

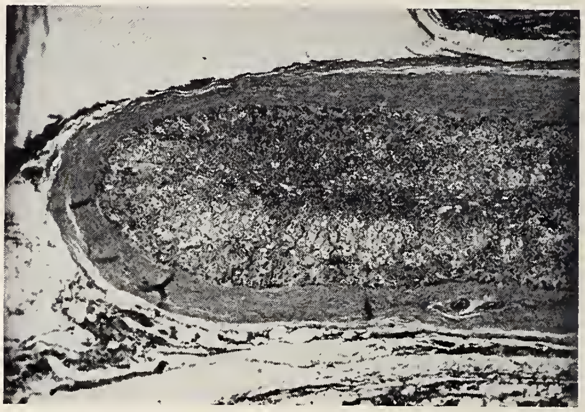

Figure 3.—Atrophic adrenal gland, showing all layers both above and below the central medulla (×20).

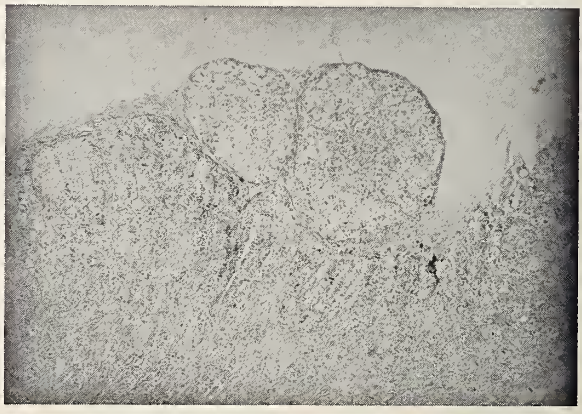

Figure 4.—Nodular hyperplasia. Pronounced zona fasciculata hyperplasia plus adenoma-like bodies of same cell types (×25).

When apparently normal adrenals are found, hyperfunction cannot be ruled out, and surgical treatment should parallel that for hyperplasia. Other investigators have reported microscopically normal adrenals in cases of established adrenal cortical hyperfunction. Where subtotal resection is practiced, the amount of tissue to be removed has been a

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*Since this material was presented for publication, this man's urinary steroids have become elevated, and have responded to ACTH stimulation. At recent operation, 6 gm. of hyperplastic adrenal tissue was removed from the left side, with results satisfactory to date. No adrenal tissue was found on the right side. (Bilateral exploration, anterior approach.)

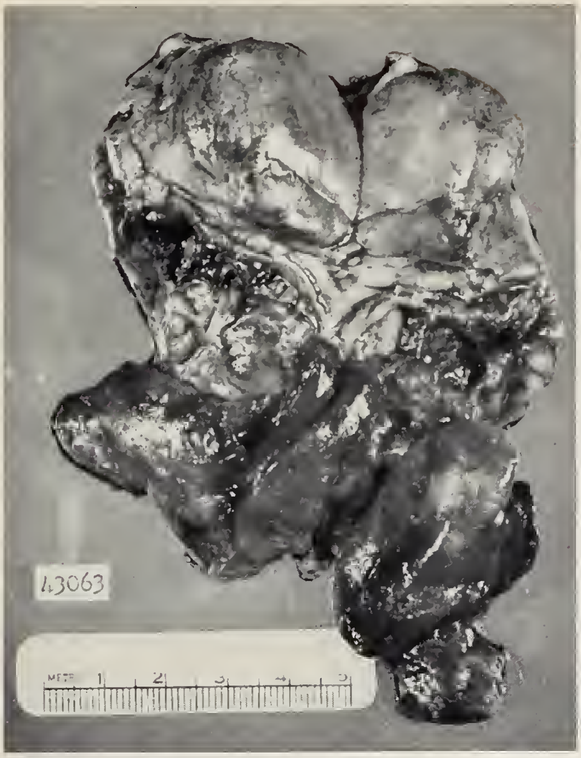

Figure 5.—3 cm. cortical adenoma, sectioned (at top of picture). Remaining adrenal was atrophic.

problem. Cope and Raker,[3] and others, liken this problem to the achievement of adequate subtotal resection in thyroidectomy for hyperthyroidism. They believe that subtotal removal of hyperplastic adrenals is best, but should be relatively more radical than in thyroid resection. Where adenoma or carcinoma of the adrenal cortex is causing the syndrome, this problem is considerably simplified.

In one remarkable case the patient, a woman, has been under study and care for 25 years, spanning almost the entire era of knowledge of this disease. In 1934, half of the left adrenal was removed for a small tumor that was described as "hypernephroma or adenoma" by the pathologist. Symptoms improved for a time, then returned. In 1935, half of the right adrenal was removed, and the tissue was considered "normal." In 1941, upon development of obvious signs of adrenal cortical hyperfunction, a large left adrenal gland containing "numerous cortical adenomata" was removed and the patient's weight returned to normal and menses resumed. In 1947, urinary ketosteroids were normal by the Zimmerman reaction, but there were many of the stigmata of Cushing's syndrome (frequent infections, hirsutism, weight gain, buffalo hump, osteoporosis, mild diabetes). After studies in 1953, in which hyperfunction was again apparent, the patient was lost to follow-up.

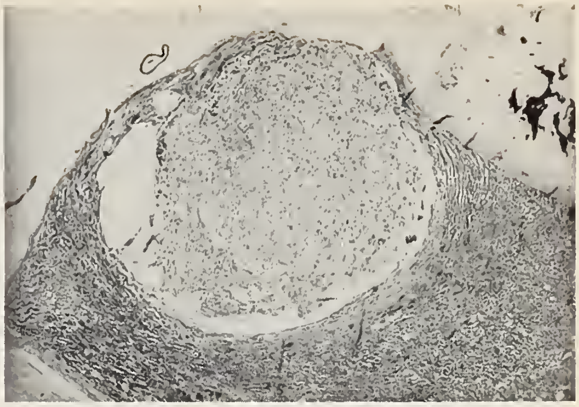

Figure 6.—Basophilic adenoma of anterior pituitary (×25). (These are considered by some observers to be incidental findings.)

PATHOLOGY

In the 16 cases of Cushing's syndrome in the present series there were five cases of adrenal cortical hyperplasia alone; two cases having nodular hyperplasia with adenoma-like bodies; five cases with discrete cortical adenomata (in which remaining adrenal was atrophic); two cases of cortical carcinoma; and two cases with apparently normal adrenal cortex (although one of the patients refused operation on the alternate side). All the 13 women had benign disease, whereas two of the three men had carcinoma. (See Figures 2 to 5.)

Pituitary basophilism cannot be positively established without autopsy or hypophysectomy, for the diagnosis depends on increased numbers of basophilic cells, basophilic adenomata or Crooke's changes.[5] Of the seven patients upon whom autopsy was done, two had minute basophilic adenomata, with pronounced adrenal-cortical hyperplasia; one (Figure 6) had a basophilic adenoma and an adrenal-cortical adenoma; one, described as pituitary basophilism, had cortical hyperplasia. Of the three cases showing no pituitary changes, two had adrenal cortical carcinoma and one had pronounced nodular hyperplasia bilaterally. The first four cases, described above, having combined pathologic changes, might be classified as Cushing's disease, rather than syndrome. The third case contradicts the opinion of those who have stated that only cortical hyperplasia results from pituitary basophilic stimulation. However, some observers believe that the minute pituitary basophilic adenomata may be incidental findings.[10] In seven cases in which pathological study of the ovaries was done, "Stein-Levinthol" ovaries were not reported, as in other recent studies.[15]

Attempts are being made to correlate symptomatology and severity of the syndrome with the zonal or cellular pattern of the cortical tissue examined.[1,12] When distinctions were made by the pathologist, hypertrophy (or hyperplasia) of the zona fasciculata was most frequently pointed out. Other investigators consider Cushing's syndrome to be a manifestation of pan-hypercorticalism and have expressed the opinion that, in a given case, all layers and all secretions of the adrenal cortex are involved. Certainly, this is not borne out by the cases in which no diabetes is present, or in others in which there is no hypertension, fluid retention or sodium retention, and no excessive loss of potassium. An even newer concept, based on microchemical, histochemical and perfusion studies of the adrenal cortex, is proffered by Symington and coworkers.[30] They seem to have proven that the zona reticularis and zona fasciculata should not be considered as separate functional zones. They expressed belief that the inner zone is the active secreting zone for corticoids and androgens arising from acetate and cholesterol, while the fasciculate zone stores these and other necessary precursors and enzymes. The glomerular zone would then be for storage or release. They believe that ACTH acts directly on the zona reticularis cells first. Variations in appearance of the three zonal cell types under different circumstances would thus be manifestations of relative activity or depletion.

Regardless of these research considerations, it is widely accepted that at least 95 per cent of all cortical tissue should be removed, and this is achieved surgically only by leaving in situ 10 per cent or less of one entire adrenal gland.

540 North Central Avenue, Glendale 3.

REFERENCES

1. Asworth, C. T., and Garney, R. F.: The diffuse adrenal lesions in Cushing's disease: Histologic observations on surgically removed adrenals in four cases, Am. J. Path., 34: 1161-1171, Nov.-Dec. 1958.

2. Christy, N. D., Wallace, E. Z., and Jailer, J. W.: The effect of intravenous ACTH on plasma 17-21-dihydroxy-20-ketosteroids in normal individuals and in patients with disorders of the adrenal cortex, J. Clin. Invest., 34:899, 1955.

3. Cope, O., and Raker, J. W.: Cushing's disease, N.E.J.M., 253:119-126, and 165-172, July 28, 1955 and Aug. 4, 1955.

4. Cope, O., and Schatzki, R.: Tumors of adrenal glands: I. Modified air injection and roentgen techniques for demonstrating cortical and medullary tumors, Arch. Int. Med., 64: 1222-1238, 1939.

5. Crooke, A. C.: A change in the basophil cells of the pituitary gland common to conditions which exhibit the syndrome attributed to basophil adenoma, J. Path. Bact., 41:339-349, 1935.

6. Cushing, H.: The Pituitary Body and Its Disorders, Philadelphia, Lippincott, 1912, p. 341, Case XLV.

7. Cushing, H.: The basophil adenomas of pituitary body and their clinical manifestations (pituitary basophilism), Bull. Johns Hopkins Hosp., 50:137-195, 1932.

8. Cushing, H.: Further notes on pituitary basophilism, J.A.M.A., 99:281-284, 1932.

9. Forbes, A. P., and Albright, F.: Values of urinary 17-ketosteroids in relation to type of adrenal tumor or hyperplasia in Cushing's disease, J. Clin. Endocr., 11:925, 1951.

10. Glenn, F., Karl, R. C., and Horwith, M.: The surgical treatment of Cushing's syndrome, Ann. Surg., 148:365-374, Sept. 1958. (Discussions by Walters, Harrison, Naffziger, Abbott, Cope.)

11. Hardy, J. D.: Surgical Physiology of the Adrenal Cortex (a Monograph), Chas. C. Thomas, Pub., copyright 1955, p. 161.

12. Heinbecker, P., O'Neal, L. W., and Ackerman, L. V.: Functioning and nonfunctioning adrenal cortical tumors, Surg., Gynec. and Obst., 105:21-33, 1957.

13. Hinman, F., Jr., Steinboch, H. L., and Forsham, P. H.: Preoperative differentiation between hyperplasia and tumor in Cushing's syndrome, J. Urol., 77:329-338, March 1957.

14. Hutton, J. H., Creticos, A. P.: Cushing's syndrome, Illinois M. J., 8:29-55, April 1957.

15. Iannoccone, A., Gabrilove, J. L., Sohval, A. R., and Soffer, L. J.: The ovaries in Cushing's syndrome, N.E.J.M., 261:775-780, Oct. 15, 1959.

16. Jailer, J. W., Gold, J. J., and Wallace, E. Z.: Evaluation of the cortisone test as a diagnostic aid in differentiating adrenal hyperplasia from adrenal neoplasia, Am. J. Med., 16:340, 1954.

17. Jailer, J. W., Langson, D., and Christy, N. P.: Cushing's syndrome: An adrenal or pituitary disease?, J. Clin. Endocrinol. and Metab., 16:1276-1280, Sept. 1956.

18. Kepler, E. J., Sprague, R. G., Mason, H. L., and Power, M. A.: The pathologic physiology of adrenal cortical tumors and Cushing's syndrome, Lausentian Hormone Conference: Recent Progr. Hormone Research, 2:345-389, 1948.

19. Kovacic, N., Matavinovic, J., and Proseujak, M.: Qualitative differences in urinary 17-ketosteroids excretion in patients with Cushing's syndrome, Acta Endocrin., 24:393-401, March 1957.

20. Kyle, L. H., Meyer, R. J., and Canary, J. J.: The mechanism of adrenal atrophy in Cushing's syndrome due to adrenal tumor, N.E.J.M., 257:57-61, July 11, 1957.

21. Lang, C. N. H.: Conditions associated with secretion of adrenal cortex, Fed. Proc., 6:461-471, 1947.

22. Nabarro, J. D., Maxham, A., and Walker, G.: Stimulation and suppression of the adrenal cortex in Cushing's syndrome, J. Clin. Endocrinol. and Metab., 18:586-599, June 1958.

23. Olson, W. E., and Higgins, G. A.: Mental depression associated with hyperadrenocorticism, Am. J. Psychiat., 114:1041-42, May 1958.

24. Plotz, C. M., Knowlton, A. I., and Ragan, C.: Natural history of Cushing's syndrome, Am. J. Med., 13:597-614, Nov. 1952.

25. Robinson, A. M., Dimoline, A., and Jones, D. G.: Consideration of some types of adrenal tumors, Ciba Foundation Colloquia on Endocrinology, 12:137-152, 1958.

26. Scott, W. W., and Hudson, P. B.: Surgery of the Adrenal Gland (a Monograph), Chas. C. Thomas, Pub., copyright 1954, p. 119.

27. Soffer, L. J., Geller, J., and Gabrilove, J. L.: Response of the plasma 17-hydroxycorticosteroid level to gel.—ACTH in tumorous and nontumorous Cushing's syndrome, J. Clin. Endocrinol. and Metab., 17:878-883, July 1957.

28. Sprague, R. G., Kvale, W. F., and Priestley, J. T.: Management of certain hyperfunctioning lesions of adrenal cortex and medulla, J.A.M.A., 151:629-639, 1953.

29. Stillman, J. S.: Current status of steroid therapy in rheumatic disorders, N.E.J.M., 259:820-826, Oct. 28, 1958.

30. Symington, T., Currie, A. R., O'Donnell, V. J., Grant, J. K., Oastler, E. G., and Whyte, W. G.: Hyperplasia and tumors of the human adrenal cortex, Ciba Foundation Colloquia on Endocrinology, 12:102-121, 1958.

31. Tyler, F.: Cushing's Syndrome, Presented before Pasadena Med. Soc. (Unpublished).

32. Vogt, M.: Observations on some conditions affecting rate of hormone output by suprarenal cortex, J. Physiol., 103:317-332, 1944.

33. Walters, W.: Subtotal adrenalectomy for Cushing's syndrome, A.M.A. Arch. Surg., 66:244-252, 1953.

34. Wu, C. P., and Wang, J. T.: Surgery of the adrenals, Chinese M. J., 76:152-163, Feb. 1958.

Ototoxic Antibiotics

JAMES L. SHEEHY, *M.D.*, Los Angeles

• Shortly after the introduction of streptomycin and dihydrostreptomycin in the treatment of tuberculosis, irreversible perceptive hearing losses were noted as a side effect. Although hearing loss became less of a problem when reduced dosage schedules were adopted, the more widespread use of these drugs, often in combinations with other antibiotics, in nontuberculous disease has caused an increase in hearing loss in the last few years. Neomycin and kanamycin share this ototoxic property. Widespread use of these drugs is resulting in loss of hearing in a significant number of cases.

THERE IS NO KNOWN TREATMENT for the loss of hearing that may result from the use of neomycin, kanamycin, dihydrostreptomycin or streptomycin. Frequently the loss is such that a hearing aid cannot help, and sometimes total deafness results. Losses so caused are continuing to occur, and, in the case of dihydrostreptomycin, the prescribing physician may not know of it, owing to the latent period of months between treatment and the onset of hearing loss.

I have observed 26 cases of loss of hearing due to these drugs (Table 1). All but three of them occurred within the last four years. Twenty were associated with dihydrostreptomycin therapy, four with neomycin and two with kanamycin. In eight of the cases associated with dihydrostreptomycin therapy, the antibiotic was used in treatment of a cold. Two of these patients are totally deaf and six are helped so little by a hearing aid that they are for all practical purposes deaf.

THE STREPTOMYCES ANTIBIOTICS

The streptomyces antibiotics include streptomycin and its reduction product dihydrostreptomycin, neomycin and kanamycin. As a family, these drugs have certain properties in common: They must be injected to be effective systemically; they are excreted by the kidney; they are ototoxic: and in the case of neomycin and kanamycin, they are nephrotoxic. The dangers of ototoxicity are obviously increased if there is impaired renal function, and this may develop during therapy with neomycin and kanamycin.

STREPTOMYCIN AND DIHYDROSTREPTOMYCIN

The ototoxicity of streptomycin and dihydrostreptomycin was recognized soon after the introduction of these drugs in the treatment of tuberculosis.[1] Although either drug will cause loss of hearing if used in a sufficient dosage over a long enough period, there is a predilection for vestibular toxicity with the use of streptomycin and auditory toxicity with the use of dihydrostreptomycin (Table 2). Vestibular dysfunction (vertigo) becomes manifest during therapy with streptomycin and is reversible with discontinuation of therapy. In the case of dihydrostreptomycin, loss of hearing and tinnitus become apparent after a latent period of two to six months, are progressive and irreversible. Because of the disposition of dihydrostreptomycin to cause irreversible hearing loss and considering the latent period, it was recommended as early as 1951[2] that dihydrostreptomycin not be used, either alone or in combination with other antibiotics. Where one of these drugs is indicated, streptomycin, which has the same antibacterial spectrum, should be used.

Unfortunately, the combination drugs on the market up until the latter part of 1959 contained dihydrostreptomycin rather than, or along with, streptomycin. These drugs were Bicillimycin,® Cillimycin,® Combiotic,® Crysdimycin,® Dicrysticin,® Dihydrocillin,® Districillin,® Durycin,® S-R-D Penicillin® and Strocillin.® Most physicians who used these drugs were not aware that they contained dihydrostreptomycin, or, if they were aware of it, they were unaware of the ototoxic properties.

It is true that dihydrostreptomycin has been used over prolonged periods in patients with tuberculosis

TABLE 1.—*Condition for Which Ototoxic Antibiotics Were Given in 25 Cases of Resulting Deafness*

	Combiotic*	Dihydrostreptomycin	Neomycin	Kanamycin
Urinary infection	1	3	3	1
Respiratory tract infection	4	4	....	....
Tuberculosis	....	3	1	....
Pneumonia	1	1	....	1
Abdominal operation	1	2	....	....
	7	13	4	2

*Crystallin procaine penicillin G, sodium penicillin G, and dihydrostreptomycin sulfate.

From the Otologic Medical Group and the Department of Otolaryngology, University of Southern California School of Medicine, Los Angeles 33.

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TABLE 2.—*Characteristics of Ototoxic Actions of Streptomycin and Dihydrostreptomycin*

	Primary Site of Action	Symptoms	Onset	Course
Streptomycin	Vestibular	Vertigo, tinnitus	During therapy	Reversible
Dihydrostreptomycin	Cochlear	Tinnitus, hearing loss	Latent period of 2 to 6 months	Progressive, irreversible

and loss of hearing has developed in only a small proportion of them. Recently, however, it has become apparent that in some patients a hearing loss has developed after a small dose,[8] presumably due to hypersensitivity. In one case 0.5 gm. appears to have caused a hearing loss.[6] In others the dose was as little as 1.5 gm.,[5] 2 gm.,* and 7 gm.[7] In some cases a moderate loss of hearing occurred from an initial course of dihydrostreptomycin and was followed by a severe loss after one injection at a later time.

During the latter half of 1959, a number of hospitals in the Los Angeles area removed all of the above-mentioned combination drugs containing dihydrostreptomycin from their pharmacies. Shortly thereafter, the drug houses supplying these antibiotic combinations began withdrawing them from the market, substituting a penicillin-streptomycin combination. It should be pointed out, however, that although combinations of this type are safer, they certainly are not entirely without risk of damage to the inner ear.

NEOMYCIN

Neomycin is a drug that has been used topically with great success in the control of many Gram-negative and Gram-positive infections. Because of renal and auditory toxicity, systemic use of it has been limited to patients in hospital with serious infections unresponsive to other antibacterial or chemotherapeutic agents.[3] Even when used in the usual therapeutic dose (15 mg. per kilogram of body weight per day) for more than ten days, renal and auditory dysfunction may develop.† The nephrotoxic manifestations are said to be reversible, but the auditory symptoms are not. Most physicians seem to be aware of the nephrotoxic effects of this drug, but many have not been aware that it may cause serious deafness.

Four cases of ototoxicity from neomycin have been observed (Table 1). In three of them the patient became totally deaf. The following case is typical of the findings in these cases:

A 32-year-old nurse received 1 gm. of neomycin daily for two weeks while in hospital for treatment of pyelonephritis. During treatment she noted the onset of tinnitus and one week after the last dose of neomycin a hearing loss developed that rapidly progressed to total deafness.

KANAMYCIN

Kanamycin is a newer addition to the family of streptomyces drugs. Despite the ototoxicity of this drug,[4] it has been recommended by the manufacturer for initial therapy in Staphylococcic infections.‡ The potential seriousness of the problem, however, is manifest in the package description (Kantrex,® Bristol) with the drug: "Patients should be well hydrated during Kantrex® therapy. In patients with renal disease and impaired renal function, the daily dose should be reduced to avoid accumulation of drug in serum and tissues. In such patients if therapy is expected to last seven days or more, a pretreatment audiogram should be obtained and repeated during therapy. Kantrex® therapy should be stopped if tinnitus or subjective hearing loss develops or if follow-up audiograms show significant loss of high frequency response."

Two cases of ototoxicity from kanamycin treatment have been observed. In one, a moderately severe hearing loss developed after a daily dose of 1 gm. for 15 days in the treatment of pneumonia. In the other a severe hearing loss developed:

A 55-year-old physician was put in hospital with a urinary tract infection. He had a mild hearing loss, the result of dihydrostreptomycin therapy for tuberculosis two years previously. He was given 6 gm. of kanamycin over a three-day period and shortly thereafter a severe (75 decibel) bilateral hearing loss developed. Because of the severity of the hearing loss, a hearing aid was useless to him.

RECOMMENDATIONS

1. In view of the ototoxicity of dihydrostreptomycin, and considering its latent period, this drug or drug combinations containing dihydrostreptomycin should not be used systemically.

2. When systemic streptomycin therapy is indicated, therapy should be stopped at the first sign of ototoxicity (vertigo, tinnitus). If impaired renal function is present, a lower dosage schedule should be used.

3. Kanamycin should be used only where sensitivity tests indicate that this is the drug of choice. In a poorly hydrated patient, or one with impaired renal function, reduced dosage should be used and then only with the realization by physician and

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*Case observed by the author.

†Printed on package by the vendor.

‡Kantrex Injection (Bristol Laboratories, Inc., Syracuse, New York). Advertisement in J.A.M.A., 171, Dec. 12, 1959.

patient of the possibility of irreversible hearing loss as the result of treatment. In such a patient, a pretreatment audiogram should be obtained and treatment stopped at the first sign of ototoxicity as manifested by subjective complaints of tinnitus or hearing loss or evidence by audiogram of loss of hearing in the higher frequencies.

4. The use of neomycin systemically should be limited to patients in hospital with a severe infection in whom no other drug is found to be effective. The benefits to be derived from treatment should be weighed against the possibility of severe loss of hearing. The patient should be made aware of the possibility of hearing loss as a result of the treatment and a pretreatment audiogram should be obtained. The patient should be observed carefully for tinnitus or hearing loss and for signs of impaired renal function.

5. As new antibiotics are introduced, the ototoxicity should be questioned in the case of any that are effective systemically only by injection.

2122 West Third Street, Los Angeles 57.

REFERENCES

1. Glorig, A.: Relation of streptomycin and dihydrostreptomycin to hearing and the vestibular apparatus, J. Speech & Hearing Disorders, 15:124, 1950.

2. Glorig, A.: Effect of dihydrostreptomycin hydrochloride and sulfate on auditory mechanism, Ann. Otol., Rhin. & Laryng., 60:327-335, 1951.

3. Greenwood, G. J.: Neomycin ototoxicity, A.M.A. Arch. Otolaryng., 69:390-397, 1959.

4. Hawkins, J. E.: The ototoxicity of kanamycin, Ann. Otol., Rhin., & Laryng., 68:698-715, 1959.

5. International Correspondence Society of Ophthalmologists and Otolaryngologists, Collected Letters—De Weese, D. D.: Series II, page 8, Jan. 15, 1957.

6. International Correspondence Society of Ophthalmologists and Otolaryngologists, Collected Letters—Shambaugh, G. E.: Series II, page 2, Jan. 15, 1957.

7. International Correspondence Society of Ophthalmologists and Otolaryngologists, Collected Letters—Williams, M. L.: Series II, page 40, March 15, 1957.

8. Shambaugh, G. E., Jr., Derlacki, E. L., Harrison, W. H., House, H., House, W., Hildyard, V., Schuknecht, H., and Shea, J. J.: Dihydrostreptomycin deafness, J.A.M.A., 170:1657-1660, Aug. 1, 1959.

Nasal Bleeding in Children

ROBERT D. BURTON, *M.D.*, Grand Rapids, Michigan

• Nasal bleeding is a frequent and distressing occurrence in childhood. Many causes of nasal bleeding in children are recognized but trauma seems to be involved in most cases.

A small localized area on the septum is the usual site of bleeding. The salient items in control of nasal bleeding are: (1) Position of the child, (2) application of pressure against the bleeding area and (3) formation and support of a clot.

NASAL BLEEDING in children is a problem frequently encountered in everyday practice by pediatricians, general practitioners and otolaryngologists.

ETIOLOGY

Nasal trauma from rubbing or picking the nose is often the cause of bleeding. Vigorous rubbing of the nose by children with allergic disease has received much attention recently. Walker[10] reported that in over 70 per cent of a group of 60 children with nasal bleeding once a month or oftener, there was direct association between the bleeding and allergic disease. Supporting this finding of allergic rhinitis followed by vigorous nose rubbing, or the "allergic salute," is the study of Girsh,[4] who observed recurrent nasal bleeding as a symptom in 55 of 100 children with allergic disease who were carefully followed in a large allergy clinic.

Trauma from the habit of picking or vigorously blowing crusted nasal secretions often results in tearing away a small area of nasal epithelium and damaging an exposed blood vessel, usually a septal vessel, as the septum has a rich vascular network and the nostril is big enough to admit a finger.

Not uncommonly, bleeding occurs at night while the child is asleep and nasal rubbing or trauma is not an immediate factor, which led Schulman[9] to suggest some alteration in circulatory dynamics as a cause. Dohlman[3] raised the question of other "endogenous factors" as causes for repeated bouts of nasal bleeding at night. Other causes to be kept in mind are the acute infectious processes such as coryza, measles, whooping cough, scarlet fever, rheumatic fever and influenza.

Diseases of the blood-forming organs including aplastic anemia and the various forms of leukemia also are characterized by nasal bleeding.

Deficiency diseases associated with nasal bleeding in children include vitamin C deficiency (scurvy) and vitamin K deficiency, which may occur in certain intestinal disorders and also in the newborn.

Hemorrhagic disorders, such as the vascular purpuras, thrombocytopenic purpura and the coagulation defects are also associated with bleeding from the nose.

A rule of thumb to help determine whether a bleeding episode is the result of a systemic disease or is strictly localized to the nose is offered by Schulman: If "on careful history and physical examination and family history, epistaxis proves to be the only manifestation of bleeding, it is most likely that the child does not have an underlying hemorrhagic disorder."

A blow on the nose of sufficient force to fracture the nasal bones will usually result in a tear in the nasal mucosa and profuse bleeding.

Foreign bodies entering either by way of the nostrils or from the nasopharynx (as in coughing or vomiting) may cause bleeding from the nose.

Malignant new growths of the nose and paranasal sinuses contain thin-walled vessels which may ulcerate and bleed.[8] Especially to be borne in mind is the profuse hemorrhage that can occur from nasopharyngeal fibroma in childhood.

ANATOMY

Almost without exception the area involved in nasal bleeding in children is a well defined region on the septum. Although this area was first described by an American surgeon, James L. Little,[6] in 1879, a German laryngologist, W. Kiesselbach,[5] who published his observations in 1884, has generally been credited with the original investigation and his name has been associated with this region.

As described by Little, the area spanned "about half an inch . . . . from the lower edge of the middle of the column [septum]." Batson,[1] carried out injection studies and noted that the area is one of various sized arterioles, venous and capillary channels which form a rich plexus. The major contributing vessels are the nasopalatine branch of the sphenopalatine artery, the terminal branches of the descending palatine and superior labial arteries and the branches of the anterior and posterior ethmoidal arteries (Figure 1).

From the Department of Otolaryngology, Palo Alto Medical Clinic, Palo Alto.

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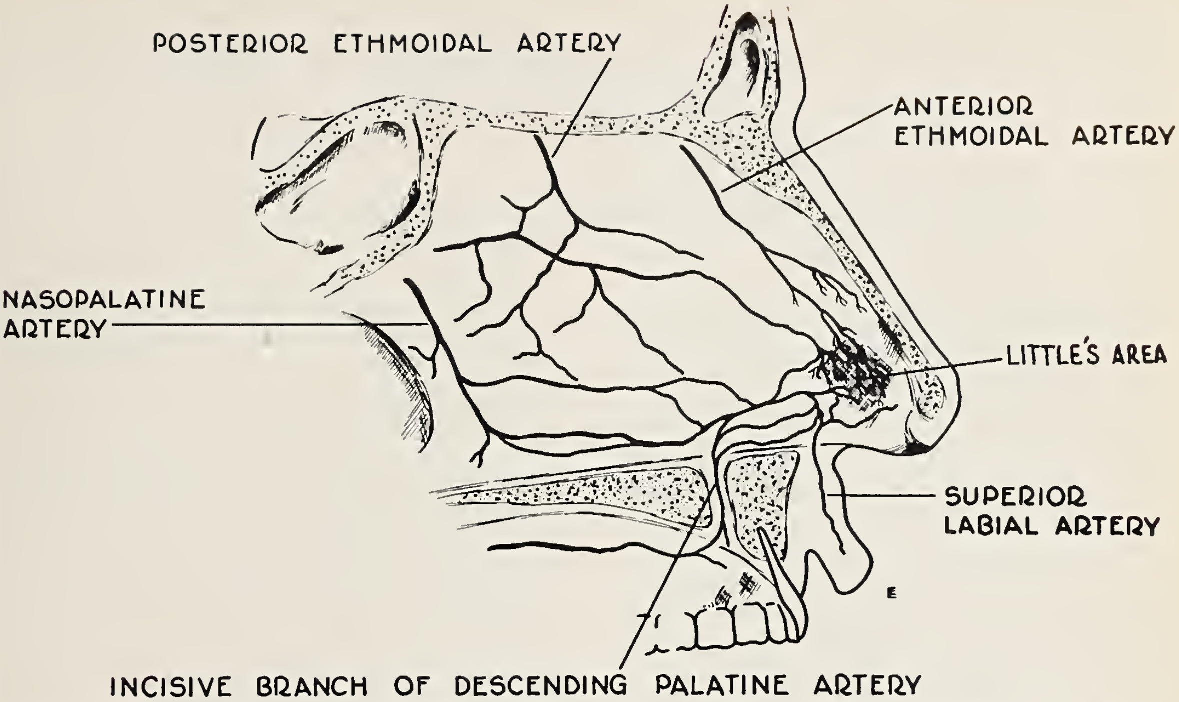

POSTERIOR ETHMOIDAL ARTERY
ANTERIOR ETHMOIDAL ARTERY
NASOPALATINE ARTERY
LITTLE'S AREA
SUPERIOR LABIAL ARTERY
E
INCISIVE BRANCH OF DESCENDING PALATINE ARTERY

Figure 1.—Arterial supply of Little's area on nasal septum. (Reproduced with permission from Ogura, J., and Senturia, B.[7]: Epistaxis, Laryngoscope, 59:743, July 1940).

This area is within easy access of the exploring finger of the child and is the region of the septum most prone to trauma by forces either outside or just inside the nose. As the inspired air passing over this region has not as yet become warmed by the nasal turbinates to body temperature or humidified, it has a drying effect on this area of nasal mucosa, which tends to make crusts form quickly. Then if the crusts are removed by picking or by forceful blowing, a chain of events is begun which can bring about the erosion of one of the previously mentioned vessels.

In a study of the cases of children with epistaxis admitted to Barnes Hospital and Children's Hospital in St. Louis between 1928 and 1942, Ogura and Senturia[7] noted that in all patients the area of bleeding was the anterior portion of the septum. Bleeding from the lateral wall of the nose or the posterior portion of the nasal septum is practically unheard of in children.

TREATMENT

There are three essential factors to remember in the treatment of any nasal bleeding, particularly in children:

1. Position of the child.
2. Application of pressure against the bleeding area.
3. Formation and support of a clot.

In the first place, the position of the head should be upright, with a slightly forward tilt to prevent blood from entering the nasopharynx and pharynx lest it cause coughing and vomiting. The most common error by the parent is to keep the child supine with the head raised slightly. This only keeps the blood out of sight.

Pressure against the bleeding area can often be applied by the parent at home or while en route to a physician. As the area is about 1 to 2 cm. from the anterior edge of the septum, firm pressure can be applied with relative ease. All that is necessary is to compress the nasal alae with the thumb and forefinger against the septum for five minutes, then relax the pressure for a minute and apply it again, if bleeding continues.

Formation of a clot often begins soon if proper position and application of pressure as described above have been carried out. If the clot is inadequate, bleeding will soon begin again. If it does, light cautery may bring about adequate thrombosis. Possibly the more constant pressure afforded by anterior nasal packing may be needed.

The physician about to proceed with this third step should have direct visualization of the site of bleeding. If the bleeding has temporarily stopped, gently rubbing the anterior septal area with a cotton-tipped applicator will cause it to begin again enough for purposes of identification. Normal mucous membrane, when gently wiped with such an applicator, does not bleed but a damaged vessel will.[2]

Once the site of bleeding is located, a pledget of cotton with a topical anesthetic, such as 4 per cent cocaine, should be placed over the area to gain complete cooperation of the child by rendering any further nasal treatment painless. After the area is insensitive, the vessel or area can be lightly touched with a chromic acid bead, a silver nitrate stick or electrocautery. Since electrocautery may entail a frightening sound and appearance, chemical cautery is usually preferable. After cauterization, a small ball of cotton covered with petrolatum jelly is inserted just inside the nostril to retard drying of the treated area and to keep the patient from touching it with a finger. Thereafter, a lubricating jelly such as petrolatum jelly or Neo-Cortef® Ointment may be applied once or twice daily for a week.

Rarely are nasal packs necessary in children; but in cases of generalized bleeding from many points, as in leukemia or other conditions in which there is a coagulation defect, anterior, and occasionally posterior, packing is essential for control.

Prophylactic antibiotics should be given to any child who requires nasal packing for longer than 48 hours.

515 Lakeside Drive S.E., Grand Rapids, Michigan.

REFERENCES

1. Batson, O.: The venous networks of the nasal mucosa, Ann. Otol. Rhin. and Laryng., 63:571, Sept. 1954.

2. Beinfield, H.: General principles in the treatment of nasal hemorrhage, Arch. Otolaryng., 57:51, Jan. 1953.

3. Dohlman, G.: The origin of nasal bleeding, Acta. Otolaryngol., 26:575, 1938.

4. Girsh, L. S.: Allergic rhinitis; a common cause of recurrent epistaxis in children, J. Dis. Childhood, 99:819, June 1960.

5. Kiesselbach, W.: Über spontane nasenblutungen, Klin. Wchnschr., 21:375-377, 1884.

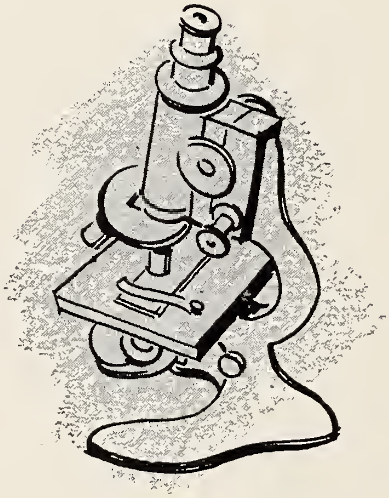
6. Little, J. L.: A hitherto undescribed lesion as a cause of epistaxis, with 4 cases, Hosp. Gaz., 6:5, March-Dec. 1879.

7. Ogura, J. H., and Senturia, B. H.: Epistaxis, Laryngoscope, 59:743, July 1949.

8. Schall, L. A.: Malignant tumors of the nose and nasal accessory sinuses, J.A.M.A., 137:1273, Aug. 7, 1948.

9. Schulman, I.: The significance of epistaxis in childhood, Pediatrics, 24:489, Sept. 1959.

10. Walker, D. H.: Allergy and recurrent epistaxis in children, Ann. Allergy, 17:872, Nov. 1959.



The Etiology of Schizophrenia

A Review

ANTONIO J. FERREIRA, *M.D.*, San Jose

• The causes and the nature of the psychiatric disorder labeled *schizophrenia* remain vexingly obscure. Perhaps as an expression of a still extant body-mind controversy, most of the experiments and statements made toward an elucidation of the problem follow one or the other of two opposing postulations: (a) That its origin is genetico-organic; (b) that it is environmental. In a review of the outstanding "facts" for either argument, it is notable that they presuppose not only a difference in theoretical frameworks, but two radically distinct outlooks. This is reflected in therapy, a field in which organicists and environmentalists stand even further apart: the organicist, relying heavily on electroshock and drugs, hopes to counteract a hypothetical body malfunction, and the environmentalist, through psychotherapy, attempts to make it possible for the patient to disentangle his own conflicting feelings and reaction patterns.

Between the two an eclectic position seems hardly tenable. For, in spite of voluminous research and speculation, it has not been possible to build a bridge between the two camps and integrate different outlooks which, at times, have brought psychiatry almost to the point of schism.

THE PSYCHIATRIC DISORDERS that fall under the diagnostic label of *schizophrenia* represent instances of a concept largely based upon the descriptive formulations of Kraepelin, Bleuler and Adolf Meyer. Their descriptions of the "disease," of its identifying characteristics and "symptoms" have remained practically unchanged to this day. And yet schizophrenia, as a nosologic group, has lost much of its former clarity, for the boundary line that separates it, conceptually, from other psychiatric conditions has become, through the years, fuzzier and more and more indistinct.

What causes schizophrenia is a question that has occupied the mind of every psychiatric researcher and theoretician for over half a century. Through successive and often overlapping cycles of proof and disproof, of argument and rebuttal, it has excited much controversy and posed many baffling queries. But for all that has been said and done, the etiology of schizophrenia still remains a vexingly obscure subject. In many ways, it seems that it has come to take the place of an old philosophical nut, the body-mind dualism, now expressed around a seemingly scientific entity, a "disease" whose incidence (1 per cent to 3 per cent of the whole population) astounds the imagination. Is schizophrenia an "organic" process brought about by some inimical agent, by some genetic alteration, by some endocrino-metabolic malfunction? Or is it a "functional" disorder, brought about through some kind of learning, as the end-result of human interactions to which the individual was exposed during his formative years? These are the questions in which the nature-nurture problem in the etiology of schizophrenia is generally expressed. Kraepelin had thought schizophrenia (which he addressed by the old name *dementia praecox*) to be either a degenerative disease of the brain or a metabolic intoxication leading on to auto-intoxication. Bleuler saw schizophrenia as a toxic disease, with histopathologic features that he described and believed characteristic but which no one else could confirm. He admitted, however, to the importance of the psychological experiences in the life of the individual (memories), although only insofar as they contribute to "shape but not to cause the clinical picture." Meyer regarded schizophrenia (which he preferred to call *parergasia*) as the end-result of faulty habits of reaction acquired in the early days of life, and leading on to a progressive maladaptation of the individual to his environment, culminating in a situation of withdrawal from reality.

In these three different etiologic conceptions of schizophrenia we find the birth of our present controversies and endeavors, for which the still extant philosophico-religious discomfort over the body-mind question might have been the cradle.

At least since the days of Roger Bacon, in the thirteenth century, the scientific mind has always displayed a decisive preference for experiment over speculation. However, much of what has been said about the cause and the nature of schizophrenia has remained speculative and nondemonstrable; in this area, experiment has been slow and for the most part fruitless. With some arbitrariness, which undoubtedly represents the reviewer's inescapable bias, this communication will review the outstanding statements so far made about or relevant to the problem of the cause of schizophrenia, and will give al-

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Submitted July 14, 1960.

most exclusive preference to those that in some scientifically acceptable way stem from experimental work. On the assumption that each one of these statements and experiments militates for, and is an expression of opposing theoretical approaches, the field of inquiry will be divided in two broad camps or arguments: (1) The "genetico-organic" argument, and (2) the "environmental" argument.

THE GENETICO-ORGANIC ARGUMENT

The argument that schizophrenia has a genetic and constitutional basis has been running strong since the early days of Kraepelin. Twenty years ago, Sheldon[70,71] gave the topic some popularity as he revitalized Kretschmer's work on body typology. In extensive and systematic studies which attempted to combine body measurements and personality ratings, Sheldon came to conclude that a body-type which he called *ectomorphic* and an aggregate of personality traits which he called *cerebrotonia* were mildly correlated. Sheldon's cerebrotonia was an approximate of what is usually referred to as schizoid personality. Sheldon's work and conclusions have been much criticized,[84] and today they are looked upon as only a rather dubious contribution (if any at all) to our understanding of the genesis of schizophrenia.

The findings of Kallmann[42,43] on twins have had a much greater importance: From statistical studies on the incidence of schizophrenia, Kallmann pointed out that the expectancy rate for schizophrenia in twins was 86 per cent for monozygotic twins as compared with 14 per cent for full siblings and dizygotic twins. The results in Kallmann's work have been widely publicized and quoted. However, a critique of his work as recently undertaken by Jackson[38] has severely shaken its importance with the disclosure of several important weaknesses in his method, in his conclusions and even in his statistics.

Meanwhile Kallmann's conclusions had become quite influential. For instance, Bender,[9] from her clinical impressions of 626 children diagnosed as schizophrenic, defined childhood schizophrenia as an illness due to "a developmental lag of the biological processes from which subsequent behavior evolves by maturation at an embryological level, characterized by an embryonic plasticity leading to anxiety and, secondarily to neurotic defense mechanisms."

Leaving behind Bender's momentous "definition," we turn our attention to those studies that aimed at investigating and demonstrating some specific alteration in the chemical contents of the body of schizophrenic persons. Generally speaking, biochemical research studies in schizophrenia have been carried along two general paths: (1) A group of studies attempting to compare the chemical constituents of schizophrenic persons with the counterparts in suitable controls, in search for a metabolic defect or deviation; and (2) another group of studies in which some fraction of the body fluid of a schizophrenic is administered to animals with the expectation of demonstrating some specific change in their behavior.

The first group of studies has brought out a heap of voluminous and highly unconvincing "findings" which, characteristically, no one else seems quite able to confirm or duplicate. We will confine ourselves to the most spectacular and recent of them.

In recent years, much of this kind of research has stemmed from observations about hallucinogenic (lysergic acid diethylamide, mescaline) and tranquilizing drugs. Many of these drugs have a biochemical structure similar to that of serotonin, a substance which is believed to play some (yet unknown) role in the brain. Rinkel and coworkers,[65] noting the psychologic and autonomic changes that follow administration of lysergic acid diethylamide (LSD), postulated that the drug interferes with the normal function of a major enzyme system, and he commented that the clinical response seemed to indicate that the epinephrine cycle was involved. Thus, most studies have had to do with the role of serotonin, the search for disturbances of enzyme systems and the investigation of hypothetical deviations in the epinephrine metabolism.

Along these lines of investigation, a first thrill came when Gaddum[27] discovered that an hallucinogenic agent, the lysergic acid diethylamide (LSD-25), was a powerful antagonist of serotonin. It was then hypothesized that the normal functioning of the central nervous system depends upon a normal serotonin level. Soon afterward, Woolley and Shaw[89] postulated that abnormalities in the functioning of the central nervous system might be associated with either a deficiency or an excess of serotonin. When Pletscher and coworkers[64] indicated that the action of reserpine in the brain could be related, possibly, with a release of serotonin from its bound-state in the cell, Shaw and Woolley[69] advanced the view that cerebral serotonin played an etiologic role in schizophrenia. But this lead might have come to a halt: Turner and Mauss[86] investigated the levels of serotonin (and acetylcholine) in the ventricular and spinal fluids of psychotic patients and found no differences between these groups of patients and a group of control subjects.

Studies on the metabolism of epinephrine encouraged Hoffer[36,37] to advance the view that a defect in epinephrine metabolism resulting in the formation of excessive amounts of adrenochrome and adrenolutin might be an etiologic factor in schizophrenia.

Data obtained by Leach and Heath[47] seemed to support this hypothesis; they reported evidence of abnormally rapid oxidation of epinephrine in schizophrenic patients,[47] leading to an accumulation of adrenolutin. However, an independent laboratory[14] was not able to duplicate such a demonstration. Still, a study of the urine of patients with a variety of psychiatric disorders (depression, schizophrenia) revealed an increased excretion of epinephrine and adrenolutin[81]; but, again, an investigation of the plasma concentrations attained by intravenous infusions of epinephrine and norepinephrine failed to show any difference between a group of schizophrenic subjects and normal volunteers.[15]

Several investigators attempted to uncover alterations in the indole metabolism by administering large quantities of tryptophan and then studying its effect in body fluids. The results have been, if not understandable, at least amusing. For the effect of tryptophan loading on indole excretion of schizophrenic patients (compared with normal subjects) has been found to be higher (Banerjee and Agarwal[6]), lower (Lauer and coworkers[45]) and indifferent (Shaw and coworkers[68]).

The work of McGeer[58,60,61] resulted in reports that schizophrenic persons have a general "aromaturia," suggesting a derangement of the metabolism of aromatic compounds. But when Mann and LaBrosse[55] investigated the subject they came to conclude that the reported difference in amount of phenolic acids in the urine was not ascribable to schizophrenia but rather was correlated, at a highly significant level with coffee-drinking habits.[55]

Similarly, reports of an increase in blood of a copper-carrying enzyme, ceruloplasmin,[3] were later ascribed to a dietary deficiency in ascorbic acid[57] and claims that the DPP*-oxidase activity of serum is altered in schizophrenia[1,5] and that some schizophrenic patients may benefit from the administration of triiodothyronine,[23] were not confirmed in studies by Meyer and coworkers.[62]

Notwithstanding these frustrations, the search for a hypothetically altered metabolite in the body of schizophrenic persons has continued and. if anything, with a greater zeal and obstinacy. Presently awaiting confirmation (or refutation), the observations of Bogoch and coworkers[12] are worth mentioning. These investigators found that the mean concentration of "total neuraminic acid" in the cerebrospinal fluid was lower in schizophrenic persons as a group than in normal persons.

On the assumption that schizophrenia reflects some disturbance in the transformation of chemical to kinetic energy, Gottlieb and coworkers[30,31] investigated the levels and the specific activity of adenosinetriphosphate (ATP), and its transformation in adenosinediphosphate (ADP) with release of energy. On the basis of differences in the levels of adenylic acid (AMP), which were, in their experiment, lower for chronic schizophrenic patients than for control subjects, they concluded that "in schizophrenia there is a disturbance in the regulation of biologic energy formation and utilization."

Two other investigations are worth mentioning: Colbert and coworkers[16] found that a "majority of childhood schizophrenics had markedly depressed or absent vestibular responses to caloric and rotational tests"; and Smith and Sines,[73] in a rather elegant experiment, demonstrated that the odor in the sweat of schizophrenic persons was characteristically distinguishable from that of normal subjects.

We turn now to studies that have followed a different general format. In the quest for the "organic" in schizophrenia, these studies, as a group, have been concerned with the administration of body fluids of schizophrenic persons to animals (and other humans) in the hope of eliciting some alteration of behavior ultimately ascribable to metabolites peculiar to and characteristic of schizophrenia.

Along these lines, Lazell and Prince[46] reported that the death rate of tadpoles in water contaminated with blood serum from patients with schizophrenia was higher than when serum from normal persons was used. Macht and Macht[54] described a phytotoxic property in blood serum of schizophrenic persons that was capable of inhibiting the mitosis rate in the shoots of the common lupine; and Fedoroff[18] described a similar inhibiting effect to cells in tissue culture.

Streifler and Kornblueth[80] said that the serum of schizophrenic persons inhibited the glucose uptake of rat retina in vitro, and further that the serum of female patients had greater inhibitory power than that of males. According to Baruk,[7] the bile of catatonic patients produced a toxic state in doves; and Fischer[2] claimed that the plasma of psychotic patients was toxic to the larvae of the *Xenopus laevis*, until Georgi and coworkers[28] invalidated his report.

In the experiments of Winter and Flataker,[88] rats that had been trained in rope climbing exhibited, after intraperitoneal injection of plasma from psychotic patients, a significant slowing of their climbing time. However, Ghent and Freedman[29] were unable to duplicate these results. From experiments on the metabolism of chicken erythrocytes, Frohman and coworkers concluded that "in the plasma of schizophrenics there must be either an abnormal substance or an excessive amount of a normal substance which interferes with the control of carbohydrate metabolism and energy transfer"[26]; and further, that such a "factor" in the plasma of schizophrenic subjects "interferes with some phase of hydrogen transport."[25]

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* N,N-dimethyl-p-phenylenediamine.

A catatonia-like reaction in monkeys when blood serum from schizophrenic persons was injected into their ventricles was described by McGeer and coworkers.[59] Heath and coworkers[33,34] claimed to have isolated from schizophrenic patients a substance, an abnormal protein named taraxein, which produced a catatonia-like syndrome when injected into normal monkeys and into human volunteers. However, Siegel and coworkers,[72] having failed to duplicate Heath's results, pointedly questioned: "Taraxein, fact or artifact?"

Studying the orb-weaver spider *Zilla-x-notata*, Bercel[10] observed a significant deviation in the behavior and web-building characteristics of spiders to which the serum of catatonic patients had been administered.

In an effort to demonstrate the presence of the mysterious schizophrenic factor, Nickin and coworkers[63] performed a cross-transfusion between a schizophrenic patient and a normal volunteer; the procedure elicited "no clinically significant changes" in the volunteer, either during or after the cross-transfusion. This confirmed the equally negative results of the experiments of Freedman and Ginsberg[24] who had conducted extensive exchange transfusions in schizophrenic patients.

And still the search goes on. From lead to lead, from hypothesis to experiment, from high hope to grim disappointment—teams of investigators continue the quest for a "plasma factor," for an illusive "metabolite," for a biochemical abnormality that would lend fresher vitality to the much discussed issue of "organicity" in schizophrenia. For, in the words of an enthusiast, "once the biochemical abnormality is found, an anti-metabolite can be produced [and] then active medical treatment can be instituted."[44]

THE ENVIRONMENTAL ARGUMENT

That environmental forces play an overwhelming role in the shaping up of the personality and the individual characteristics of behavior are so widely accepted as not to need further emphasis. The language we speak, the table manners we display, the moral and religious values we hold, the bargaining habits we entertain are but instances of the transmission, through mimicking and learning, of behavior patterns and reactions that have obviously nothing or almost nothing to do with organic or hereditary peculiarities. In this light, a great deal of the behavior of a schizophrenic person must of necessity result from and be an expression of the impact of environmental forces, that is to say, of his interplay with the particular emotional milieu provided by the family into which he grew, from which he learned and with which he related.

The behavior of the schizophrenic is, nevertheless, at times, so deviant from the common and the usual, so "irrational," so difficult to understand and constructively orient, that some sort of explanation, of inquiry and demonstration, is demanded from those who hold schizophrenia to be an exclusive product of the environment and who find heredo-organic investigations not only unconvincing but unnecessary.

The environmentalists, generally inspired by Freud's basic contribution to the understanding of behavior, almost unanimously agree that schizophrenia has its foundations in the experiences of the first years of life. They contend that the schizophrenic process has its beginning in a faulty relationship with the first love-object (mother, mother-figure, mother-surrogate), with the first exposures and interactions with a pathologic human world, which is, in a sense, contagious and therefore pathogenic. In this regard, Sullivan[82] had already observed that anxiety in a mother elicits anxiety in her infant; and, more recently, Szalita-Pemow,[83] among many others, expressed her convictions not only that schizophrenia develops in the first years of life, but that its pathologic process begins "perhaps in the first months . . . when the baby is exposed to overwhelming anxiety."

Most of the present views on schizophrenia as a (human) reaction to the environment, are based on data obtained in the course of individual psychotherapy with schizophrenic patients. Unfortunately this kind of data is most unsuitable for scientific treatment; although, as it accumulates, it continues to substantiate the general contention about "environment," it is by its very nature too biased to convince the unconvinced. For this reason, the present review will not include those "facts" and statements that are solely based or derived from observation of schizophrenic patients in individual psychotherapy. Instead, it will concentrate on studies that were acceptably formal and resulted in observations that were not so fragile as to be reasonably attacked as biased, impressionistic or made by faulty method.

The environmentalists hold that the process that leads on to schizophrenia begins in very early infancy, with the very first experiences with the environment. What is the evidence for such a claim? When does the human organism become susceptible to environmental forces? Does the hypothetical impact of very early experiences affect the individual for life? These are the basic questions that put the environmental argument to a test.

The answers do not come so readily. For moral reasons, no one can attempt to produce schizophrenia experimentally—that is, to subject infants to this or that environment in order to study its effect and consequences. Then where can environmentalists look for scientific substantiation of their beliefs?

To a great extent, the environmental case rests not so much on experimentation with humans, but more on experimentation with other animals whose behavior can be studied in the laboratory and with whose lives we can interfere without qualm.

Thus, we find justification to review in this communication a great diversity of studies, many of them on animals far from man on the Darwinian scale. They constitute evidence of the importance of the environment; but not all have a direct bearing on the etiology of schizophrenia. They are worth mentioning, though, not only for their possible interest to the student of behavior in general, but for the pertinent manner in which they suggest ways that emotional disturbance (schizophrenia included) could conceivably begin.

Let us start with the question of prenatal environment. Myth and legend give a good deal of attention to ways in which events or circumstances befalling the pregnant woman could affect her offspring. In our days of science, Jones,[41] a psychoanalyst, noted that on the basis of clinical observations the mother's attitude toward an unborn baby does influence the course of pregnancy and labor. This "impression" has been further substantiated by Sontag and coworkers,[75] whose observations indicate that "severe anxiety in a mother may produce a marked increase in the muscular activity of her unborn baby," and that "infants of mothers experiencing prolonged periods of severe anxiety during late pregnancy, have been observed to be highly active and irritable, with frequent bowel movements and often with a severe food intolerance." Similar observations were reported by Turner,[85] who concluded from a study of 100 mothers and babies that "prenatal emotional stress might affect the reactivity of the foetal nervous system and alter the whole pattern of postnatal behaviour."

In a double-blind study of 163 mothers during pregnancy and then of their newly born babies, Ferreira[19] found, on defined criteria, a statistically significant relationship between a highly rejecting and negative attitude by the mother toward pregnancy and the baby to come, and the presence of a "deviant" behavior pattern in newborn babies. From these observations the conclusion was that, for the present, it was "reasonably safe to state that the influence of the emotional environment (mother's attitude) upon behavior has its zero hour before birth."

Recently the influence of the mother, or mother-substitute, upon the neonate has become the target of many exciting studies.

We start with the work of Lorenz,[53] who carried out studies that elicited the curious phenomenon now known as "imprinting." Using the greylag goose, Lorenz discovered that the newly hatched gosling would consistently follow any large moving object, including the experimenter himself. After a few days, the goslings appeared to be strongly attached to that first moving object and did not respond at all to the real mother or even other birds of the same species. Lorenz emphasized the irreversible nature of this process,[66] for which he used the term *praegung* usually translated as "imprinting." He demonstrated how he, himself, could become the "mother-figure" of the ducklings, and other birds, a "mother" which they would follow as obediently and securely as if it were the real mother duck. The image of Lorenz maternally emitting "the right quack" and being followed faithfully by his ducks has become widely known through newsprints[52]; and the phenomenon of "imprinting"—a kind of learning whereby early social contacts determine the character of adult social behavior—came to be well recognized as a subject of further studies.[32,35]

Through these works, it became well established that, at least for the species so far studied, the environment places its indelible mark upon the neonate, a mark that is going to influence and to alter the individual's future development and behavior patterns.

The importance of the mother to the neonate's normal development was also evidenced in the work of Liddell[49,50] with sheep and goats. In the laboratory, he experimentally induced neurosis in twin goats. By placing each of the twins in a different situation (one in the presence of and contact with the mother, the other in isolation from her) he made a startling discovery: The baby goat isolated from the mother had a much higher susceptibility to experimental neurosis than did the twin that remained with the mother. Liddell concluded that "somehow the mother's presence protects the baby goat from the traumatic experience." In a follow-up test, the goats that had been "traumatized" two years earlier, were brought back to the laboratory for study: The goats that had had their mothers with them during their early "traumatic" experience showed no evidence of abnormal behavior, whereas the other goats that had been isolated from the mother during that same early experience, still had unmistakable signs of experimental neurosis.

Using a split-litter technique on cats, Seitz[67] demonstrated profoundly abnormal patterns of behavior in those that had been separated from the mother at an early age. He also observed that the results apparently differed with the age of the neonate at the time of separation.

That early infantile trauma has persistent effects on adult behavior, lasting throughout life and affecting every modality of behavior, seems to have been well documented in animals. But what about humans? The pioneering work of Spitz answers the question.

Spitz[77,78,79] studied the behavior and development of babies reared in a foundling home and in a nursery home. These two homes were comparable in all respects, except that the nursery home permitted and encouraged the presence of a mother (or a surrogate) whereas the foundling home kept the babies in great isolation, not only from each other but from mother or other possible mother-figure. The findings were most striking: In contrast to the relatively normal babies in the nursery home, the babies in the foundling home showed pronounced and profound behavior deviations. The foundling home's child, prevented from a "normal" contact with other human beings (mother) had lost previously acquired skills and faculties, had soon become depressed and showed signs of the most profound withdrawal, screaming incessantly if disturbed. Further, these children began losing weight rapidly and became a prey to intercurrent ailments and infections, which resulted in an astoundingly high death rate. Spitz summed it up by pointing out that the developmental quotient of the isolated children falls quickly, and that they become "extraordinarily retarded"; if they survive, "the damage inflicted to these children . . . by their being deprived of maternal care, maternal stimulation and maternal love . . . cannot be repaired by normal measures,"[76] and is perhaps irreparable even with therapeutic means.

Along the same line, Levine,[48] working with rats, observed the development of abnormal behavior, in terms of a maladaptation to stress, whenever the infant rat was kept in isolation from the litter and the mother. From behavioral and physiologic studies, Levine concluded that stimulation is necessary for proper development, and that, broadly speaking, the behavior and physiologic make-up of an adult is greatly and universally affected by the presence or absence of stimulation in childhood. And he added: "It may be that the detrimental effects of the foundling home [referring to Spitz's work] have less to do with maternal deprivation than the simple lack of stimulation that is inevitable in most such environments." In this regard, one is here reminded of the studies now being carried out on sensory deprivation[74] and the sensational results so far obtained: When submitted to extreme conditions of sensory deprivation for long periods, the human organism becomes profoundly disturbed and has "abnormal" functioning which may go to the point of hallucinations and delusions indistinguishable, in themselves, from those of acute schizophrenia.

The studies so far reviewed constitute only an indirect contribution to etiology of schizophrenia: They establish on a firm experimental basis that the early experiences in the life of the organism powerfully influence the development of behavior patterns that, more or less indelibly, color the organism's future ways of reacting. But how do such patterns of early "trauma" affect and weave their presence into the development of the organism? At this point we wish that longitudinal studies in humans had been made; perhaps then some aspects of schizophrenia would become less controversial. But so far there have been no longitudinal studies, and whether they will be meaningfully undertaken in the decades ahead remains to be seen. However, the assumption commonly held by environmentalists that, in schizophrenia, the disease of the child relates to the abnormality of the family, has prompted many investigations. Naturally, the first impulse was to study the mothers of schizophrenics, whom psychotherapists, assumptively, had begun referring to as "schizophrenogenics."

An attitude survey test developed by Mark[56] succeeded in differentiating well a group of mothers of schizophrenic patients from a group of mothers of normals. On the other hand, when Block and coworkers[11] attempted to investigate the personality characteristics that conceivably distinguished parents of neurotic persons from parents of those with schizophrenia they came to inconclusive results notwithstanding some limited evidence for a relationship between the parents' personality and the child's diagnosis. Again, no detectable difference between parents of neurotic persons and those of schizophrenic patients was noted by Fisher and coworkers,[22] who, nevertheless, observed that a group of parents of neurotic-normals was distinguishable from a group of schizophrenics' parents by its more harmonious relationships and greater degree of intercommunication.

Further corroboration of an association of pathogenic environment with schizophrenia was found in the work of Alanen,[4] who studied the personality characteristics of 100 mothers of schizophrenic children. When compared with a control group, they appeared as decidedly disturbed persons having a definite tendency to dominate, a lack of understanding of children's needs and feelings, and a loveless and aggressive attitude toward the child. The study further indicated that in several cases the father seemed to be no less, and sometimes more, pathogenic than the mother.

In spite of obvious difficulties to outlining the characteristics of a schizophrenogenic environment, many studies have lent further credence and vitality to the concept. Turning aside from the "schizophrenogenic" mother and father on whom the first, oversimplified views had focused, some investigators began to concentrate their attention on the whole family constellation. It became apparent that in order to understand the schizophrenic process, it would be crucially important to understand the particular family milieu in which pathologic forces enmesh and intertwine as if seeking a balance—Jackson[39] referred to the "family homeostasis"—and in which the schizophrenic behavior of the identified patient is not so much an end-product but an integral and even contributive part. Thus seen, schizophrenia appears to be not a reaction of an individual, or the maleficent work of one parent or another; instead, it is an expression of a particular kind of family interaction, of a sort of pathologic *gestalt* in which the patient, the mother, the father and the siblings, are only the parts of a total greater than, and different from, their sum.[2,13,17,40] This sort of thinking prompted the innovation of "family therapy," which in the hands of pioneering investigators is opening new insights into the schizophrenia-producing family. Seemingly, observations made in these investigations have resulted in new lights about the "transmission of the irrationality"[51] and the identification of peculiarly pathologic patterns of interaction to some degree characteristic of "schizophrenogenesis."[8,20,87]

COMMENT

At the conclusion of this review one may be led to wonder whether the two opposing theoretical views that find motion and justification in such experiments could be combined and integrated in some sort of eclectic argument. However, at this point of our knowledge, an eclectic position seems hardly tenable, for organicists and environmentalists differ on much more than theoretical concepts. They differ on outlook. The organicist sees schizophrenia as a well-defined "disease" with more or less specific etiologic features, symptomatology, course and prognosis. The environmentalist looks upon schizophrenia as a reaction to perhaps particular but not necessarily specific life-situations, as a part of the broad spectrum of human behavior; to the environmentalist, the boundary line between schizophrenia and nonschizophrenia is represented not by the sharp line of the "abnormal" but, if at all, in the blurred and fuzzy edges of "borderline psychosis" and of "neurosis." Therefore, those who, willy-nilly, call themselves eclectics stand in a very precarious equilibrium. The two opposing views can hardly be welded. For even if a specific "metabolite" were to be found in schizophrenics, it would most probably represent a psychosomatic link, a sort of epiphenomenon to the schizophrenic process.

So far goes the dissidence as to pathogenesis and nature of schizophrenia. In a practical sense, the two outlooks stand even farther apart as they are reflected in two conspicuously opposed approaches to therapy. The environmentalists confine themselves to psychotherapeutic methods, with the conviction that attention to the emotional impact of one human being upon another offers the best opportunity to "solve" the particularly conflicting effect of certain life experiences. The organicists rely on electroshock, insulin coma, metrazol convulsion, carbon dioxide inhalation, prefrontal lobotomy, and, of course, an incessant stream of assorted drugs. The "eclectics," unable to deny the importance of environment, but still hopeful for an organic answer—well, they try both.

And so it goes. Almost to the point of schism, as if reenacting an old philosophical controversy, psychiatrists find themselves divided on the problem of schizophrenia, trying to see their way between organic and environmental arguments, at this point almost irreducibly opposed. Perhaps the fruits of future research will allow a bridge between the two camps. Perhaps ultimately some sort of psychosomatic concept will permit a monistic outlook in which the organic and the environmental come together as the two sides of a coin, as two different aspects of the same thing. But, for the present the problem of the etiology of schizophrenia has yet to find its Spinoza.

2060 Clarmar Way, San Jose 28.

REFERENCES

1. Abood, L. G., Gibbs, F. A., and Gibbs, E.: Comparative study of blood ceruloplasmin in schizophrenia and other disorders, A.M.A. Arch. Neurol. & Psychiat., 77:643-645, 1957.

2. Ackerman, N.: The Psychodynamics of Family Life, Basic Books, New York, 1958.

3. Akerfeldt, S.: Oxidation of N,N-dimethyl-p-phenylenediamine by serum from patients with mental disease, Science, 125:117-119, 1959.

4. Alanen, Y. O.: Mothers of schizophrenic patients—Study of personality and mother-child relationship of 100 mothers and significance of these factors in pathogenesis of schizophrenia in comparison with heredity, Acta Psychiat. et Neurol., 33, supp. 124, 1958.

5. Angel, C., Leach, B. E., Martens, S., Cohen, M., and Heath, R. G.: Serum oxidation tests in schizophrenic and normal subjects, A.M.A. Arch. Neurol. & Psychiat., 78:500-504, 1957.

6. Banerjee, S., and Agarwal, P. S.: Tryptophan-nicotinic acid metabolism in schizophrenia, Proc. Soc. Exper. Biol. & Med., 97:657-659, 1958.

7. Baruk, H.: Experimental catatonia and the problem of will and personality, J. Nerv. & Ment. Dis., 110:218-235, 1949.

8. Bateson, G., Jackson, D. D., Haley, J., and Weakland, J.: Toward a theory of schizophrenia, Behavioral Science, 1:251-264, 1956.

9. Bender, L.: Childhood schizophrenia, Psychiatric Quarterly, 27:663-681, 1953.

10. Bercel, N. A.: A study of the influence of schizophrenic serum on the behavior of the spider zilla-x-notata, A.M.A. Arch. Gen. Psychiat., 2:189-209, 1960.

11. Block, J., Patterson, V., Block, J., and Jackson, D. D.: A study of the parents of schizophrenic and neurotic children, Psychiatry, 21:387-397, 1958.

12. Bogoch, S., Dussick, K. T., and Lever, P. G.: Clinical status and cerebrospinal fluid "total neuranimic acid," A.M.A. Arch. Gen. Psychiat., 1:441-449, 1959.

13. Bowen, M., Dysinger, R. H., and Basamania, B.: The role of the father in families with a schizophrenic patient, Am. J. Psychiat., 115:1017-1020, 1959.

14. Cohen, G., Holland, B., and Goldenberg, M.: The stability of epinephrine and arterenol (norepinephrine) in plasma and serum: A comparison of normal and schizophrenic subjects, A.M.A. Arch. Neurol. & Psychiat., 80:484, 1958.

15. Cohen, G., Holland, B., and Goldenberg, M.: Disappearance rates of infused epinephrine and norepinephrine from plasma, A.M.A. Arch. Gen. Psychiat., 1:228-231, 1959.

16. Colbert, E. G., Koegler, R. R., and Markham, C. H.: Vestibular dysfunction in childhood schizophrenia, A.M.A. Arch. Gen. Psychiat., 1:600-617, 1959.

17. Dysinger, R. H., and Bowen, M.: Problems for medical practice presented by families with a schizophrenic member, Am. J. Psychiat., 116:514-517, 1959.

18. Fedoroff, S.: Toxicity of schizophrenics' blood serum in tissue culture, J. Lab. & Clin. Med., 48:55-62, 1956.

19. Ferreira, A. J.: The pregnant mother's emotional attitude and its reflection on the newborn, Am. J. Orthopsychiat., 30:553-561, 1960.

20. Ferreira, A. J.: The "double-bind" and delinquent behavior, A.M.A. Arch. Gen. Psychiat., 3:359-367, 1960.

21. Fischer, B.: Stress and the toxicity of schizophrenic serum, Science, 118:409-410, 1953.

22. Fisher, S., Boyd, I., Walker, D., and Sheer, D.: Parents of schizophrenics, neurotics and normals, A.M.A. Arch. Gen. Psychiat., 1:149-166, 1959.

23. Flach, F. F., Celian, C. I., and Rawson, R. W.: Treatment of psychiatric disorders with triiodothyronine, Am. J. Psychiat., 114:841-842, 1958.

24. Freedman, A. M., and Ginsberg, V.: Exchange transfusions in schizophrenic patients, J. Nerv. & Ment. Dis., 126:294-301, 1958.

25. Frohman, C. E., Czajkowski, N. P., Luby, E. D., Gottlieb, J. S., and Senf, R.: Further evidence of a plasma factor in schizophrenia, A.M.A. Arch. Gen. Psychiat., 2:263-267, 1960.

26. Frohman, C. E., Latham, L. K., Beckett, P. G. S., and Gottlieb, J. S.: Evidence of a plasma factor in schizophrenia, A.M.A. Arch. Gen. Psychiat., 2:255-262, 1960.

27. Gaddum, J. H.: Antagonism between lysergic acid diethylamide and 5-hydroxytryptamine, J. Physiol., 121:15P, 1953.

28. Georgi, F., Rieder, H. P., and Webe, R.: Remarks on Fischer's article, "Stress and the toxicity of schizophrenic serum," Science, 120:504-505, 1954.

29. Ghent, L., and Freedman, A. M.: Comparison of effects of normal and schizophrenic serum on motor performance in rats, Am. J. Psychiat., 115:465-466, 1958.

30. Gottlieb, J. S., Frohman, C. E., Beckett, P. G. S., Tourney, G., and Senf, R.: Production of high-energy phosphate bonds in schizophrenia, A.M.A. Arch. Gen. Psychiat., 1:243-249, 1959.

31. Gottlieb, J. S., Frohman, C. E., Tourney, G., and Beckett, P. G. S.: Energy transfer systems in schizophrenia: Adenosinetriphosphate (ATP), A.M.A. Arch. Neurol. & Psychiat., 81:504-508, 1959.

32. Harlow, H. F., and Zimmermann, R. R.: Affectional responses in infant monkey: Orphaned baby monkeys develop strong and persistent attachment to inanimate surrogate mothers, Science, 130:421-432, 1959.

33. Heath, R. G., Martens, S., Leach, B. E., Cohen, M., and Angel, C.: Effect on behavior in humans with the administration of taraxein, Am. J. Psychiat., 114:14-24, 1957.

34. Heath, R. G., Martens, S., Leach, B. E., Cohen, M., and Feigley, C. A.: Behavioral changes in nonpsychotic volunteers following the administration of taraxein, the substance obtained from serum of schizophrenic patients, Am. J. Psychiat., 114:917-920, 1958.

35. Hess, E. H.: Imprinting: Effect of early experience, imprinting determines later social behavior in animals, Science, 130:133-141, 1959.

36. Hoffer, A.: Epinephrine derivatives as potential schizophrenic factors, J. Clin. & Exper. Psychopath., 18:27-60, 1957.

37. Hoffer, A., and Kenyon, M.: Conversion of adrenalin to adrenolutin in human blood serum, A.M.A. Arch. Neurol. & Psychiat., 77:437-438, 1957.

38. Jackson, D. D.: A Critique of the Literature on the Genetics of Schizophrenia, in the Etiology of Schizophrenia, Ed. by D. D. Jackson, pp. 37-87, Basic Books Inc., New York, 1960.

39. Jackson, D. D.: The question of family homeostasis, Psychiat. Quart., 31:79-90, 1957.

40. Jackson, D. D., and Weakland, J. H.: Schizophrenic symptoms and family interaction, A.M.A. Arch. Gen. Psychiat., 1:618-621, 1959.

41. Jones, E.: Psychology and childbirth, The Lancet, 1:695-696, 1942.

42. Kallmann, F. J.: The genetic theory of schizophrenia, Am. J. Psychiat., 103:309-322, 1946.

43. Kallmann, F. J.: The Genetics of Mental Illness, American Handbook of Psychiatry, Ed. by S. Arieti, Basic Books, New York, 1959.

44. Kamp, H. V., Berghorst, J., and DeJong, R. N.: Neurophysiologic variants in schizophrenia, A.M.A. Arch. Gen. Psychiat., 1:250-252, 1959.

45. Lauer, J. W., Inskip, W. M., Bernsohn, J., and Zeller, E. A.: Observations on schizophrenic patients after iproniazid and tryptophan, A.M.A. Arch. Neurol. & Psychiat., 80: 122-130, 1958.

46. Lazell, E. W., and Prince, L. H.: A Study of the Causative Factors of Dementia Praecox: The Influence of the Blood and Serum on Embryological Cells; a Preliminary Communication, U. S. Vet. Bur. M. Bull., 5:40-41, 1929.

47. Leach, B. E., and Heath, R. G.: The vitro oxidation of epinephrine in plasma, A.M.A. Arch. Neurol. & Psychiat., 76:444-450, 1956.

48. Levine, S.: Stimulation in infancy, Scientific Am., 202:80-86, 1960.

49. Liddell, H. S.: Conditioning and emotions, Scientific Am., 190:48-57, 1954.

50. Liddell, H. S.: Emotional Hazards in Animals and Man, C. C. Thomas Publishers, Springfield, 1956.

51. Lidz, T., Cornelison, A., Terry, D., and Fleck, S.: Intrafamilial environment of schizophrenic patient; VI. Transmission of irrationality, A.M.A. Arch. Neurol. & Psychiat., 79:305-316, 1958.

52. Life Magazine, Time Inc., 39:73-78, Aug. 22, 1955.

53. Lorenz, K. Z.: King Solomon's Ring: New Lights on Animal Ways, Thomas Y. Crowell Co., New York, 1952.

54. Macht, D. I., and Macht, M. B.: Phytotoxic reactions of some blood sera, with biometric analyses, J. Lab. & Clin. Med., 26:597-615, 1941.

55. Mann, J. D., and LaBrosse, E. H.: Urinary excretion of phenotic acids by normal and schizophrenic male patients, A.M.A. Arch. Gen. Psychiat., 1:547-551, 1959.

56. Mark, J. C.: The attitudes of the mothers of male schizophrenics toward child behaviour, J. Abnorm. Soc. Psychol., 48:185-189, 1953.

57. McDonald, K. R.: Ceruloplasmin and Schizophrenia; in Chemical Concepts of Psychosis, Ed. by M. Rinkel, McDowell, Obolensky Inc., New York, 1958.

58. McGeer, E. G., Brown, W. T., and McGeer, P. L.: Aromatic metabolism in schizophrenia: II. Bidimensional urinary chromatograms, J. Nerv. & Ment. Dis., 125:176-180, 1958.

59. McGeer, P. L., McGeer, E. G., and Boulding, J. E.: Relation of aromatic amino-acids to excretory pattern of schizophrenics, Science, 123:1078-1080, 1956.

60. McGeer, P. L., McGeer, E. G., and Gibson, W. C.: Aromatic excretory pattern of schizophrenics, Science, 123: 1029-1030, 1956.

61. McGeer, P. L., McNair, F. E., McGeer, E. G., and Gibson, W. C.: Aromatic metabolism in schizophrenia: I. Statistical evidence for aromaturia, J. Nerv. & Ment. Dis., 125:166-175, 1957.

62. Meyer, B. J., Meyer, A. C., and Horwitt, M. K.: Effect of triiodothyronine on serum copper and basal metabolism in schizophrenic patients, A.M.A. Arch. Gen. Psychiat., 1:372-378, 1959.

63. Nickin, G., Sacks, W., Wehrheim, H., Simpson, G., Saunders, J., and Kline, N.: Cross-transfusion in schizophrenia, Am. J. Psychiat., 116:334-336, 1959.

64. Pletscher, A., Shore, P. A., and Brodie, B. B.: Serotonin release as a possible mechanism of reserpine action, Science, 122:374-375, 1955.

65. Rinkel, M., DeShon, H. J., Hyde, R. W., and Solomon, H. C.: Experimental schizophrenia-like symptoms, Am. J. Psychiat., 108:572-578, 1952.

66. Scott, J. P.: Animal Behavior, Univ. of Chicago Press, Chicago, pp. 178-179, 1958.

67. Seitz, P. F. D.: Infantile experience and adult behavior in animal subjects; II. Age of separation from mother and adult behavior in the cat, Psychosom. Med., 21:353-378, 1959.

68. Shaw, C. R., Lucas, J., and Rabinovitch, R.: Metabolic studies in childhood schizophrenia, A.M.A. Arch. Gen. Psychiat., 1:366-371, 1959.

69. Shaw, E. N., and Woolley, D. W.: Some serotonin-like activities of lysergic acid diethylamide, Science, 124:121-122, 1956.

70. Sheldon, W. H., and Stevens, S. S.: The Varieties of Temperament, Harper & Bros., New York, 1942.

71. Sheldon, W. H., Stevens, S. S., and Tucker, W. B.: The Varieties of Human Physique, Harper & Bros., New York, 1940.

72. Siegel, M., Niswander, D. G., Sachs, E., Jr., and Stravros, D.: Taraxein, fact or artifact?, Am. J. Psychiat., 115: 819, 1959.

73. Smith, K., and Sines, J. O.: Demonstration of a peculiar odor in the sweat of schizophrenic patients, A.M.A. Arch. Gen. Psychiat., 2:184-188, 1960.

74. Solomon, P., Leiderman, H., Mendelson, J., and Wexler, D.: Sensory deprivation—A review, Am. J. Psychiat., 114:357-363, 1957.

75. Sontag, L. W.: The genetics of differences in psychosomatic patterns in childhood, Am. J. Orthopsy., 20:479-489, 1950.

76. Spitz, R.: The Influence of the Mother-Child Relationship and Its Disturbances, in Mental Health and Infant Development, Ed. by K. Soddy, Basic Books Inc., New York, Vol. I, pp. 103-108, 1956.

77. Spitz, R. A.: Hospitalism—An Inquiry into the Genesis of Psychiatric Conditions in Early Childhood, The Psychoanalytic Study of the Child, Intern. Univ. Press, New York, Vol. I, pp. 53-74, 1945.

78. Spitz, R. A.: Hospitalism—A Follow-up Report on Investigation Described in Vol. I, 1945, The Psychoanalytic Study of the Child, Intern. Univ. Press, New York, Vol. II, pp. 113-117, 1946.

79. Spitz, R. A., and Wolf, K. M.: Anaclitic Depression. An Inquiry into the Genesis of Psychiatric Conditions in Early Childhood, II. The Psychoanalytic Study of the Child, Intern. Univ. Press, New York, Vol. II, pp. 313-342, 1946.

80. Streifler, M., and Kornblueth, W.: The Effect of Blood Sera of Schizophrenics on the Glucose Utilization by the Rat Retina; in Chemical Concepts of Psychosis, Ed. by M. Rinkel, McDowell, Obolensky Inc., New York, p. 257, 1958.

81. Sulkowitch, H., and Altschule, M.: Urinary "epinephrines" in patients with mental and emotional disorders, A.M.A. Arch. Gen. Psychiat., 1:124-131, 1959.

82. Sullivan, H. S.: The Interpersonal Theory of Psychiatry, Ed. by H. S. Perry and M. L. Gawel, W. W. Norton & Co., New York, 1953.

83. Szalita-Pemow, A. B.: Remarks on pathogenesis and treatment in schizophrenia, Psychiat., 14:295-300, 1951.

84. Tanner, J. M.: Growth and Constitution in Anthropology Today, Ed. by A. L. Kroeber, The Univ. of Chicago Press, Chicago, 1953.

85. Turner, E. K.: The syndrome in the infant resulting from maternal emotional tension during pregnancy, Med. J. Australia, 1:221-222, 1956.

86. Turner, W. J., and Mauss, E. A.: Serotonin (5-hydroxytryptamine) and acetylcholine in human ventricular and spinal fluids, A.M.A. Arch. Gen. Psychiat., 1:646-650, 1959.

87. Weakland, J. H.: The "Double-bind" Hypothesis of Schizophrenia and Three-Party Interaction, in the Etiology of Schizophrenia, ed. by D. D. Jackson, Basic Books, Inc., pp. 373-388, 1960.

88. Winter, C. A., and Flataker, L.: Effects of Biological Fluids from Psychotic Patients and Normal Subjects on the Performance of Trained Rats; in Chemical Concepts of Psychosis, Ed. by M. Rinkel, McDowell, Obolensky Inc., New York, p. 238, 1958.

89. Woolley, D. W., and Shaw, E.: Some neurophysiological aspects of serotonin, Brit. M. J., 2:122-126, 1954.

CASE REPORTS

Rupture of a Duodenal Ulcer During Cortical Extract Therapy for Serum Sickness

HAMZA I. MUNIB, *M.D.*, and
JACK FROOM, *M.D.*, Petaluma

SUTURING OF A LACERATION on the right middle finger of a 38-year-old woman was carried out June 20, 1960, and after a negative reaction to a skin test for sensitivity, 3,000 units of tetanus antitoxin was given intramuscularly.

On July 1 severe hives, pain in the joints and moderate edema of the feet developed. ACTH gel, 80 units, was given intramuscularly. When symptoms persisted the following day, 40 units of ACTH gel, 0.3 cc. of epinephrine (1:10,000 dilution) and 10.0 mg. of diphenhydramine (Benedryl®) were administered intramuscularly and 2 capsules of Aristomin®* four times a day were given by mouth.

On July 5 the patient showed improvement and the pedal edema was less. Aristomin® was discontinued and instead 4 mg. of Medrol®† four times a day was prescribed. On July 7 the patient was much improved but complained of epigastric burning pain. A bland diet, with milk between meals, was prescribed and the epigastric pain lessened.

The dosage of Medrol® was reduced gradually.

On the evening of July 12 the patient had severe, constant pain in the epigastrium and the right upper quadrant of the abdomen, worse on deep breathing and accompanied by nausea. These symptoms abated but the following morning the pain recurred, this time involving the right side of the abdomen, with nausea and vomiting. The patient was then admitted to Hillcrest Hospital, Petaluma.

The patient had had right inguinal herniorrhaphy in 1952 and bilateral tubal ligation with appendectomy and ovarian cystectomy in 1945. There was no previous history of peptic ulcer.

At the time of admittance she seemed to be anxious and in severe pain and she kept a knee drawn up for a position of comfort. The oral temperature was 99.8° F. Respirations were 20 a minute and the pulse rate 80. Blood pressure was 110/50 mm. of mercury.

Board-like abdominal rigidity was noted on palpation, with tenderness on pressure and on rebound. No masses were felt. The liver, spleen and kidneys could not be palpated. On percussion, liver dullness was not altered. Peristaltic sounds were diminished. On rectal and pelvic examination, tenderness was noted in the pouch of Douglas. No masses were felt.

Hemoglobin content was 12.5 gm. per 100 cc. of blood. Packed cell volume was 35 per cent. Leukocytes numbered 37,900 per cu. mm.—polymorphonuclear cells 96 per cent (segmented 93 per cent and nonsegmented 3 per cent); lymphocytes, 3 per cent and monocytes 1 per cent. The results of urinalysis were within normal limits.

A plain film of the abdomen showed a small crescent of free air under the right dome of the diaphragm, with localized ileus in the upper small bowel.

A diagnosis of perforated hollow viscus, possibly duodenal ulcer, was made. The patient was prepared for immediate operation and preparations were made for nasogastric suction and intravenous administration of fluids. Hydrocortisone, 200 mg., and atropine, 0.4 mg., were given intramuscularly.

A right paramedian incision was made in the abdomen. A copious amount of yellowish turbid fluid was present. The gallbladder and hepatic flexure were adherent to the first part of the duodenum, which felt indurated and contained a leaking opening 2 mm. in diameter. Peritoneal lavage was carried out and the duodenal perforation was repaired. The patient did well after the operation. For six days postoperatively hydrocortisone was given in gradually decreasing doses. The patient was discharged in good condition July 20, 1960, with prescription of an "ulcer diet."

COMMENT

Danish and Landman[1] reported a case of perforation due to triamcinolone, stating that it was the first in the literature. The present case differs from the one they reported, in that here there was a very short period of therapy with cortical extract and the dose was smaller—factors which probably kept the symptoms of perforation from being masked. The total dose of ACTH given in the present case was 120 units in two days, the total dose of triamcino-

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Submitted January 30, 1961.

*Each capsule contains triamcinolone, 1 mg.; chlorpheniramine maleate, 2 mg.; ascorbic acid, 75 mg.

†6-methyl-delta-1 hydrocortisone.

lone 20 mg. in five days, and the total dose of Medrol® 82 mg. in eight days. The patient in the case reported by Danish and Landman was in hospital 23 days and during that time received 364 mg. of triamcinolone and 220 units of ACTH.

ADDENDUM

On April 11, 1961, this patient was again seen because of epigastric burning of three weeks' duration. An upper gastrointestinal series revealed a deformity of the duodenal bulb with a small active superficial ulceration. A bland diet and prescription of anti-acid preparations and sedation resulted in a complete disappearance of ulcer symptoms.

515 Hayes Lane, Petaluma (Munib).

REFERENCE

1. Danish, A. W., and Landman, M. P.: Ruptured peptic ulcer during triamcinolone therapy; report of a case, J.A.M.A., 173:900, June 25, 1960.

Anaphylactic Reactions to Chymotrypsin

A Report of Two Cases

ALLAN J. GHERINI, M.D., and
DeLARRY HOVDE, M.D., Oakland

THE USE OF proteolytic enzymes has been advocated as an adjunct in the treatment of many diseases. Aqueous chymotrypsin (Chymar® aqueous) is one of the more commonly used preparations. According to the manufacturer, it is useful in local inflammation, edema and pain, blood and lymph effusions in accidental injuries, phlebitis, thrombophlebitis, cellulitis, hernia repair, tonsillectomy, hemorrhoidectomy, plastic operations and other surgical procedures; respiratory tract conditions, obstetrical and gynecological disorders including pelvic inflammatory disease, postpartum breast engorgement, episiotomy; ocular conditions, chronic ulcers, stasis varicose, diabetic types.

Recently anaphylactic reactions to chymotrypsin injections have been reported.[1,2,3] We recently observed rather severe reaction to injected aqueous chymotrypsin in two cases.

REPORTS OF CASES

CASE 1. A 64-year-old white man had extensive operation for radical removal of a squamous cell carcinoma of the right tonsil on March 1, 1960. Postoperatively he received Chymar,® 1 cc. intramuscularly every 8 hours for four days, without untoward results.

On July 26, 1960, the patient had a resection of the right carotid artery for an aneurysm. A Dacron® tube was placed between the common carotid artery and internal carotid artery, and again the patient received Chymar,® 1 cc. intramuscularly every 12 hours for six days, with no untoward results. On November 2, 1960, the graft having failed, the Dacron® tube was removed. Chymar® was again administered. The first dose of 1 cc. was given intramuscularly at 9:30 a.m. By 9:45 a.m. the patient had become cyanotic, sweaty, dyspneic and extremely apprehensive. The pulse rate was 140 per minute. Moist rales were heard throughout both lung fields. A reaction to Chymar® was suspected, and 0.2 cc. of 1:1000 epinephrine hydrochloride was given hypodermically, 50 mg. of hydrocortisone sodium succinate (Solu-Cortef®) was given intravenously and 200 mg. of hydrocortisone sodium succinate was placed in 500 cc. of 5 per cent dextrose in water and this was infused by intravenous drip. The symptoms subsided completely. The dosage of hydrocortisone sodium succinate was then gradually decreased over the next five days.

This patient had no previous history of allergic sensitivity to anything.

CASE 2. The patient, a 40-year-old Negro man, had no history of previous allergic disease or of having received Chymar® injections. High ligation and stripping of the right greater saphenous venous system was carried out October 7, 1960. Chymar,® 1 cc. intramuscularly twice a day, was prescribed and on the following day at 9:15 a.m. 1 cc. was given intramuscularly. Almost immediately dyspnea, wheezing and a diffuse itching urticaria developed. The pulse rate was 140 per minute. The patient was in obvious distress. Epinephrine hydrochloride, 0.5 cc. in 1:1000 solution, was given hypodermically and 100 mg. of hydrocortisone sodium succinate in 500 cc. of 5 per cent dextrose in water was given as a slow intravenous drip. The symptoms of hypersensitivity reaction abated and the dosage of hydrocortisone sodium succinate was gradually reduced over the succeeding five days.

SUMMARY

Two patients under quite different circumstances had rather severe reactions to intramuscular administration of aqueous chymotrypsin. The first patient had had several previous injections before a reaction developed. The second patient had no history of previous injections of chymotrypsin. Therapy with epinephrine and hydrocortisone sodium succinate abated the symptoms in both instances.

Veterans Administration Hospital, 13th and Harrison Streets, Oakland 12 (Gherini).

REFERENCES

1. Liebowitz, D., and Ritter, H.: Anaphylactic reaction to chymotrypsin, J.A.M.A., 172:159-160, Jan. 9, 1960.

2. MacLaren, W. R., and Aladjem, F.: Allergy to chymotrypsin, J. Allergy, 28:89-90, Jan. 1957.

3. Rose, K. D.: Anaphylactic reaction to aqueous chymotrypsin injection, J.A.M.A., 173:196-197, June 18, 1960.

From Department of Surgery, Veterans Administration Hospital, Oakland 12.

Submitted February 14, 1961.

California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

An Important Milestone

WITH THE COMPLETION of its 1961 Annual Session the California Medical Association ticked off 105 years of existence. Simultaneously, it concluded one of the busiest and most important years in its modern history.

During the year the Governor's Committee on the Study of Medical Aid and Health staged a series of meetings, appointed task forces for inquiries into various facets of the total picture of medical care, argued, compromised and came out with a large though hastily-produced report. While it is still too early to forecast the ultimate results of the recommendations of the committee, it is certain that some of the recommendations in the final report will be controversial and will draw fire from the medical profession and from other segments of the overall health care team.

Also during this year the ad hoc committee appointed by the C.M.A. Council to study postgraduate education, scientific activities and the entire picture of continuing medical education deliberated at length. Here again, a large and important report has been produced (not in haste) and a number of recommendations made. These have recently been placed before the Council and will be subject to action in the coming months. The primary purpose of this committee has been to determine the position that continuing medical education and scientific activities should occupy in a large, progressive state medical association.

Basically, the studies of the ad hoc committee revolve around the changes made in all county and state medical organizations from the exclusively scientific societies of some years ago to the more economics-oriented groups of today (business leagues, as the Internal Revenue Service calls them). How far shall scientific activities be held back in favor of the political and economic pressures which demand that medical organizations enter these fields of activity? Involved is the division of funds in the budget available for one or another activity, and this leads back directly to the membership and its collective willingness to pay dues in support of various activities.

Important as these questions are, they were overshadowed this year by the proposal for unification of the medical and osteopathic professions in California. This subject brought forth more debate and more emotionalism than any other topic on the 1961 meeting agenda.

In the long run, the unification proposal was approved by the House of Delegates by a vote of 296 to 63, a vote culminating a long period of debate, parliamentary maneuvers and proposals for a number of amendments to the agreement between the C.M.A. and the California Osteopathic Association.

More recently the House of Delegates of the California Osteopathic Association approved the agreement by a vote of 100 to 10. Such a vote definitely shows the overwhelming desire of osteopathic physicians and surgeons to close the final gap between the two professions.

Over the past few decades the osteopathic schools of the country have come to look more and more like the medical schools. All forms of therapy are taught, surgery has become a specialty and a number of other specialties familiar in medical practice have been recognized. The manipulative procedures which originally constituted the entire theory of osteopathy have remained as a part of the entire training program but have been placed in a category which fits such procedures into the broader scope of practice by medical and surgical procedures. At the same time, the medical profession at large has adopted some of the manipulative procedures as a part of today's physical medicine. For example, the College of Osteopathic Physicians & Surgeons in Los Angeles no longer has a course labeled *Osteopathy;*

instead it offers a course in physical medicine and rehabilitation.

Inspections of osteopathic colleges in recent years have indicated how the two professions were coming closer to one another. These inspections, carried out by highly qualified physicians under official auspices, have indicated that the bulk of the osteopathic schools, including the school in Los Angeles, can be converted into top-grade medical schools with few changes. The curriculum can remain at approximately its present level; the principal change would be in bringing into the faculties the medical knowledge gained by physicians under the medical injunction that fact has to be proved by rigid experimentation.

The question of augmenting the faculty in the osteopathic college is already under discussion by a committee of top-flight educators who are familiar with both the similarities and the differences between the two professions. We may have every assurance that a committee of this caliber will produce an optimum result in providing California with one more approved school of medicine.

The unification plan in California would call for the conversion of the Los Angeles college into a fully accredited medical school. It would provide for the cessation of issuance of additional osteopathic licenses in California. It would allow qualified osteopathic physicians and surgeons to obtain an M.D. degree and practice under it if they so chose. It would permit such M.D.'s to become members of the California Medical Association, at first under a statewide "county society" of their own and then through existing county societies. In short, it would erase the present differences between the two professions and provide the people of California with a single high standard of medical care in place of the existing confusion.

Where there are two professional groups operating under identical state laws as regards licensure, regulations, modes of practice and scope of practice, it is only natural that they should merge their interests and their identity. As long as artificial barriers exist between the two, there is bound to be public confusion and wasted effort on the part of both organizations to maintain the gap remaining between them.

Even more important, however, is the benefit to the public to be gained by unifying the two professions in California. Today's citizen of this state must wonder why a physician and surgeon holding a valid license issued by one examining board is not the same as another physician and surgeon holding the identical license issued by another board. If this point can be resolved, as is now contemplated, the public is the winner. Confusion will be eliminated and greater areas of professional cooperation will be opened up for the public good.

Several steps remain before the ultimate unification can be completed. While some of these steps are necessarily difficult and time-consuming, the vote of confidence given by the elected representatives of both associations should be ample to convince even the most skeptical. It has been made clear that the physicians and surgeons in both groups are eager to combine in the public interest and to forget what differences they may have had in the past.

If and when this unification is consummated in California, the people and the professions will be the better for it. This will, indeed, be an important milestone.

Well Done

Each year the California Medical Association loses the valuable services of some members who have devoted many years and much effort to the activities of one or another committee. In the ever-changing picture of medical practice and the requirements of the Association, there must be some provision for turnover in committee membership.

Now that the committee appointments for the next year have been established, it is only fitting that the C.M.A. pay tribute to those committee members who have been graduated from their activities. Fortunately, such graduation marks not the end of a course but the beginning of a new period of usefulness and value. For those committee alumni of the class of '61, best wishes and many thanks for your fine services in behalf of the profession.

Our special thanks, from the point of view of California Medicine, go to Doctors Robertson Ward, chairman, and W. Dayton Clark, a member, of the Committee on Advertising. Doctor Ward has served this committee for 12 years, most of this time as chairman, and Doctor Clark for ten years. Their task, carried on at weekly meetings throughout the year, has been to screen all advertising submitted for publication in the journal. The fact that they have done an effective job is attested by the high quality of advertising found in the journal. Unfortunately for the sponsors of some advertising, the list of rejects mounts to a rather startling total.

We wish these alumni well, we thank them for their fine and devoted contributions and we wish the best for their successors in this important aspect of protecting the profession and the public against unqualified promotion.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Omer W. Wheeler, M.D., C.M.A. President-Elect

> *There is a tide in the affairs of men,*
> *Which, taken at the flood, leads on to fortune.*

IN THIS YEAR of 1961 the tide for the medical profession runs full flood. The advancing science and art of medicine have extended the years of life's span. This very extension of life has increased the need for medical care by geometric proportions. Extensive writings in newspapers and magazines have informed the public of the blessings made possible by modern medicine. An ever-rising American standard of living has created an increasing demand for medical care. Problems have arisen as to how best to provide the benefits of the advances in medicine to all those who have need for them, without resorting to systems that would diminish the quality of care and the impetus to improve.

OMER W. WHEELER, M.D.

Some politicians have seen a chance to exploit the situation. Statesmen and responsible public leaders, however, have said again and again that the medical profession itself is the only organization which can give proper direction and a solution of these problems. Our need at this time is for leadership which can put aside special interest or group affiliation for the good of the art and science of medicine and of an honored profession as a whole.

By his own experience and background, Dr. Omer W. "Bill" Wheeler is uniquely prepared for such leadership.

Born at St. Charles, Iowa, January 2, 1908, Bill Wheeler came from a pioneer Iowa family. When he was 16 his family moved to Riverside, California, where he attended the public schools. He then went first to Riverside Junior College and later enrolled at the University of Southern California, transferring to Temple University to complete his medical education. He received his M.D. from Temple on June 15, 1932, and entered internship at Temple University Hospital, where he later became chief resident and assistant to the clinical professor of surgery.

Late in 1935 Bill returned to Riverside and opened a general practice in the midst of the great depres-

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sion. Despite economic conditions in the years that followed, he built a practice, with more and more emphasis on surgery. In 1942, when Riverside had grown materially, and under war conditions was already becoming a metropolitan area with major industries, he began to limit his practice to general surgery and soon was recognized by his colleagues and the community as a leading surgeon.

He served for two years on the Board of Councilors of the Riverside County Medical Association, and, in 1940, was elected president of the Association. He was chief of staff at Community Hospital in 1942. In 1952 Bill began the first of his terms as a member of the Council of the California Medical Association, representing the Second District which comprises San Bernardino, Imperial, Inyo-Mono, Orange and Riverside counties. In his ten years on the Council, Bill's district has gone through an economic, social and political boom. It has more than doubled both in population and the number of physicians who practice in the area. In recognition of his capacity for detail and mature judgment, Bill was chosen to serve on many C.M.A. committees and commissions. In 1958 he was further honored by election as an alternate delegate to the American Medical Association.

Bill is an avid hunter, fisherman and boat enthusiast. He likes to travel, he swims for pleasure and he reads whenever his busy schedule permits. Bill and his wife Toni are the parents of three daughters and a son and they have five grandchildren. Besides membership in his own county society and in C.M.A. and in A.M.A., Bill is a fellow in the American College of Surgeons, a member of the Los Angeles Surgical Society and the Los Angeles Academy of Medicine. He was a charter member of the Tri-County Surgical Society. He is active in the Exchange Club and the Chamber of Commerce.

Our new President-Elect, not given much to talk—but effective when he does—has a record of service in medical organizations that speaks for him now.

HERMAN H. STONE, M.D.

Their Names Engrossed

WHEREAS, the California delegation is nationally regarded as outstanding in the House of Delegates of the American Medical Association; and

WHEREAS, this stature has been attained only by dedicated, diligent and intelligent work by the members of the delegation; and

WHEREAS, in 1960 Doctor Donald Cass and Doctor Stanley Kneeshaw retired as delegates after many years of service and Doctor Cass as chairman of the delegation; and

WHEREAS, in this House of Delegates we have accepted the voluntary retirement of three additional delegates who have served long and well; namely, Doctors Sam McClendon, Frank MacDonald and Paul Foster; and

WHEREAS, each of these delegates has also served this Association as its President; now, therefore, be it

Resolved: That this House of Delegates pay tribute to these five gentlemen for their long, active and effective leadership in representing California and doing so in so capable a manner that this state has long enjoyed a position of preeminence in the American Medical Association; and be it further

Resolved: That a copy of this resolution be forwarded to each of these retiring delegates.

Maternal MORTALITY REPORTS

These case reports are taken from the files of the State Department of Public Health which, together with the California Medical Association, now sponsors the statewide studies of all maternal mortalities. Selected cases are here presented from time to time as a matter of interest and illumination to all physicians concerned with the practice of obstetrics. They are prepared by the Committee on Maternal and Child Care. It is hoped that a review of such significant cases will help to improve the welfare of future California mothers.

CASE 3

THE PATIENT was a 27-year-old gravida 7, para 5, with five living children. She had been married ten years and had had one previous criminally induced abortion, three years before her death.

With the present pregnancy, approximately four and a half months in duration, the patient was first seen by a physician approximately two hours after her death at the private home of an admitted abortionist. The physician made out the death certificate and notified the police. When they arrived, they found no instruments on the premises other than a catheter.

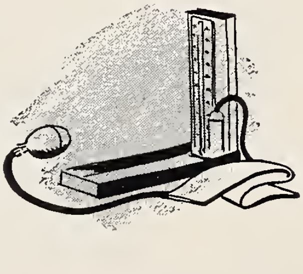
Following are the significant findings of the coroner's autopsy, performed three or four hours after death: There was a pronounced crepitation of the anterior abdominal wall; and upon incision of the abdomen, frothy blood exuded from the vessels in the subcutaneous fat. All the large blood vessels of the body, including those of the brain, contained frothy blood admixed with numerous small gas bubbles; and the heart was filled with a sanguinous foam composed almost entirely of gas bubbles. The ovaries and tubes were normal. Numerous dilated veins in the broad ligament contained many gas bubbles. The uterus was symmetrically enlarged to a level three fingerbreadths below the umbilicus, and contained an amniotic sac in which was a fetus 20 centimeters long from crown to heel. The placenta, measuring 8x9 centimeters, was attached in the midline in the uterine fundus. In the midline at the posterior placental margin was a 1 centimeter laceration of the decidua; this was contiguous with a 7x3 centimeter marginal placental separation just above. In the depths of this area of separation were several large, empty venous sinusoids, 1 to 2 millimeters in diameter. There was a soft blood clot in the decidual laceration, on the posterior wall and in the vagina. There were numerous fresh, small petechial hemorrhages in the posterior midline of the endocervical canal but no evidence of trauma to the external cercival os or to the vaginal fornices.

The autopsy diagnosis was:

1. Air embolism, massive, generalized, due to—
2. Marginal placental separation, traumatic.

COMMENTS

This tragic case is of interest from the point of view of the unusual degree of air embolism presumably produced by minimal intrauterine trauma. More than that, however, it reemphasizes the persistent problem of criminal abortion in the United States. As with this patient, the problem is principally seen among married, parous women rather than among unmarried girls. Moreover, because of the advances of modern medicine, the public has tended to take an increasingly unconcerned view of the dangers of criminal abortion. This case unhappily illustrates the fallacy of that attitude.



11th ANNUAL

REGIONAL POSTGRADUATE INSTITUTE

SACRAMENTO VALLEY COUNTIES

Presented cooperatively by Stanford University School of Medicine, Sacramento Valley Counties Medical Societies and California Medical Association Committee on Postgraduate Activities.

Guest Speaker: WILLIAM F. MENGERT, M.D., Professor and Head, Department of Obstetrics and Gynecology, University of Illinois College of Medicine.

Tahoe Tavern, Lake Tahoe

June 30 and July 1, 1961

PROGRAM

FRIDAY MORNING, JUNE 30, 1961

9:15-9:30—**Welcome and Introduction**—Arthur B. Hackett, M.D., Program Chairman.

9:30-10:10—**Pyelonephritis**—Lowell A. Rantz, M.D.

10:10-10:50—**Renal Function in Newborn**—Norman Kretchmer, M.D.

10:50-11:00—**Recess.**

11:00-12:30—**Panel Discussions** (you may go to one of your choice).

Panel 1—**Medical Disease of the Kidney**—Lowell A. Rantz, M.D., Moderator; Norman Kretchmer, M.D., Bruno Jastremski, M.D., J. Clyde Ralph, M.D.

Panel 2—**The Poor Surgical Risk**—Robert B. Harris, M.D., Moderator; J. Garrott Allen, M.D., John P. Bunker, M.D.

FRIDAY AFTERNOON

Obstetrical Session

1:45-2:00—**Introduction**—Julian Fisher, M.D.

2:00-2:40—**Simplification of Obstetrical and Gynecological Care**—William F. Mengert, M.D.

2:40-3:10—**Physiology of Menstruation**—Charles E. McLennan, M.D.

3:10-3:30—**Recess.**

3:30-5:00—**Panel Discussions** (you may go to one of your choice).

Panel 1—**Medical Aspects of Pre- and Postoperative Care**—Thomas W. Adams. M.D., Moderator; John P. Bunker, M.D., Norman Kretchmer, M.D., John R. Blake, M.D.

Panel 2—**Management of Uterine Bleeding Problems**—Henry Van de Pol, M.D., Moderator; Charles E. McLennan, M.D., Robert L. Range, M.D., Erwin Eichhorn, M.D.

Panel 3—**Emergencies in the Newborn (Exchange Transfusion and Resuscitation)**—Dennis N. Marks, M.D., Moderator; William P. Creger, M.D., John P. Bunker, M.D., Walton K. Brainerd, M.D.

SATURDAY MORNING, JULY 1, 1961

9:15-9:30—**Introduction**—William Y. Fong, M.D.

9:30-10:00—**Transfusion Hepatitis**—J. Garrott Allen, M.D.

10:00-10:45—**Recent Developments in Anesthesia**—John P. Bunker, M.D.

10:45-11:00—**Recess.**

11:00-12:30—**Panel Discussions** (you may go to one of your choice).

Panel 1—**Use of Blood in Surgical and Obstetrical Patients**—Roy L. O'Neal, M.D., Moderator; William P. Creger, M.D., J. Garrott Allen, M.D.

Panel 2—**Etiology and Management of Prolonged Labor**—George R. Fricke, M.D., Moderator; William F. Mengert, M.D., Stephen C. Thomas, M.D., John N. Miller, Jr., M.D.

SATURDAY AFTERNOON

1:45-2:00—**Introduction**—Charles I. Hamilton, M.D.

2:00-2:40—**Acute Vasospastic Toxemia of Pregnancy**—William F. Mengert, M.D.

2:40-3:10—**Staphylococcal Infection**—Lowell A. Rantz, M.D.

3:10-3:20—**Recess.**

3:20-4:30—**Two Clinico-Pathological Conferences** to run consecutively—Sacramento Pathologists and University Clinicians. Cases to be selected by Sacramento Committee.

Case No. 1—Charles I. Hamilton, M.D., Robert E. Gasber, M.D. Stanford participants to be announced.

Case No. 2—John Turner, M.D., Charles N. Blumenfeld, M.D. Stanford participants to be announced.

HOST: Sacramento County Medical Society . . . **REGIONAL CHAIRMAN:** Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights . . . **INSTITUTE FEE:** $15.00. For additional information, contact Postgraduate Activities Office, California Medical Association, 693 Sutter Street, San Francisco 2, PRospect 6-9400, Extension 60. **All California Medical Association members and their families are cordially invited to attend.**

In Memoriam

Boyce, William A. Died in Los Angeles, April 24, 1961, aged 80. Graduate of Tulane University School of Medicine, New Orleans, Louisiana, 1905. Licensed in California in 1919. Doctor Boyce was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Garrison, Benjamin Edward. Died October 25, 1960, aged 85, of hemiplegia, right. Graduate of the University Medical College of Kansas City, Missouri, 1904. Licensed in California in 1931. Doctor Garrison was a retired member of the Riverside County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Hamilton, Van Rensselaer. Died in Riverside, April 19, 1961, aged 53. Graduate of the University of Southern California School of Medicine, Los Angeles, 1934. Licensed in California in 1934. Doctor Hamilton was a member of the Riverside County Medical Association.

✣

Lewis, Edgar James. Died April 16, 1961, aged 59. Graduate of the University of Oregon Medical School, Portland, 1931. Licensed in California in 1947. Doctor Lewis was a member of the Los Angeles County Medical Association.

✣

McCann, Frank Elbert. Died in Monrovia, April 14, 1961, aged 77. Graduate of the Kentucky School of Medicine, Louisville, 1906. Licensed in California in 1917. Dr. McCann was a member of the Los Angeles County Medical Association.

✣

McPheeters, Earl Roby. Died December 2, 1960, aged 78. Graduate of the Kentucky School of Medicine, Louisville, 1905. Licensed in California in 1914. Doctor McPheeters was a retired member of the Stanislaus County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

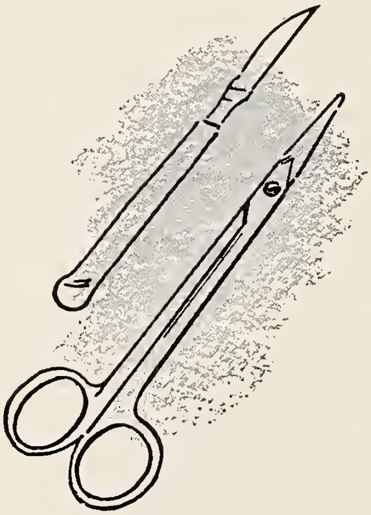
Owen, Gilbert R. Died May 9, 1961, aged 84. Graduate of the University of Michigan Homeopathic Medical School, Ann Arbor, 1901. Licensed in California in 1903. Doctor Owen was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Palomeque, Emilio J. Died February 1961, aged 60. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1923. Licensed in California in 1934. Doctor Palomeque was a member of the Fresno County Medical Society.

✣

Wright, Clifford A. Died April 29, 1961, aged 79. Graduate of the University of Southern California School of Medicine, Los Angeles, 1907. Licensed in California in 1907. Doctor Wright was a member of the Los Angeles County Medical Association.



PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

At the request of the Contra Costa County Health Department the Bureau of Public Health Social Work recently conducted a pilot study to determine the social problems associated with venereal disease among teen-agers.

Preliminary findings of the study, conducted in the Richmond City Health Clinic, disclosed that the majority of the teen-agers who have a venereal disease come from troubled families—that they have trouble at school and at home, and with employment. About half of the teen-agers in the study live in broken homes.

Many are members of families that are known to many county and state agencies, such as welfare, probation, California Youth Authority, and school guidance.

* * *

Funds totaling $290,000 were allocated to local health departments this month for four new health service projects and studies, and for the continuation of seven other projects.

The new ones are: San Bernardino County Health Department, a demonstration of preventive measures for reducing accidents and illnesses among children attending summer camps. Approximately 80,000 children attending the 85 camps in the San Bernardino Mountains will be studied for frequency and nature of accidents, illnesses and immunization status, and thereafter a preventive program will be developed.

The Alameda County Health Department will conduct a chest x-ray minifilm evaluation to determine new ways for detecting tuberculosis effectively and efficiently. Health departments have been concerned over the relatively low effectiveness at present of chest x-ray programs to detect tuberculosis in population areas where the disease is most common.

Dietary practices of senior citizens will be studied by the Pasadena City Health Department. Poor food practices constitute an important problem in the control of chronic disease among the aging.

For some time the San Mateo County Department of Public Health and Welfare has been coordinating agency service to speed rehabilitation of families with special social and health problems.

A one-year special project was approved with the objective of assisting in the health evaluation of the recipients of these services. Local interest is high in discovering ways of assisting families to regain self-sufficiency through improved health and training for employment.

* * *

The department's Crippled Children Services program provided care to 56,491 children during the 1959-1960 fiscal year, a decrease in caseload of three per cent.

Although there was a slight decrease in the total number of children receiving services through the program, there was not a corresponding decrease in total expenditures. On the contrary, a 14 per cent increase in expenditures was noted, with total program costs amounting to $7,504,629.

Not much change has been noted in the proportion of children in the major categories of eligible conditions, with the exception of congenital heart disease and rheumatic fever. To illustrate this, in 1950-51 children with congenital heart disease constituted only two per cent of the total caseload, but in 1959-60 these cases amounted to eight per cent of the total.

The changes in the rheumatic fever program have been equally dramatic. In 1951-52, the peak year, children with rheumatic fever accounted for 10 per cent of the total caseload and 20 per cent of the total program expenditures. But by 1959-60 fiscal year, the number of children with rheumatic fever represented only four per cent of the total caseload and only three per cent of total program costs.

This was the first year in which nephrosis and the late residual effects of poliomyelitis were eligible for care. Services were provided to 88 children who had polio at a total cost of $122,078.

* * *

The possible health hazards to road construction crews from the dusts, fumes, noise and vibration caused by heavy equipment will be measured this summer on the Highway 40 freeway construction project over the Donner Summit.

The Bureau of Occupational Health has received several complaints concerning illnesses reportedly caused by dusts generated by dry drilling on highway construction, and of ear damage by the noise of certain pieces of heavy equipment. Similar investigations have been made on tunnel construction.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Medicine for You in 1961-62

It is a significant honor to serve you as the thirty-first President of the Woman's Auxiliary to the California Medical Association. I will live up to the loyalty oath of this Association.

Contrary to modern psychology which adjures one to never look back, one can only plan ahead by looking back. It would be foolish indeed to make plans which did not consider the experiences and traditions of the past. Costly mistakes can be avoided by an analysis of past history. Pitfalls not visible on the surface become apparent when former plans are analyzed in the light of "success" or "failure." A plan is a poor one indeed if it precludes modification.

Flexibility is one of the absolute necessities of a workable plan. We have been led to believe that mistakes are a sign of weakness, when in truth they are the price of true learning. Each plan must have a face-saving mechanism built into it that will permit revisions, or even rejections, without embarrassment to those who have contributed time and effort to its formulation. The absence of a face-saving device is a defect which can seriously handicap an honest search for a constructiveness of action.

There are many areas of Auxiliary operation where planning can serve a useful purpose. Here are a few:

Officership: The importance of auxiliary groups precludes the right to hold popularity contests or to leave to chance the leadership of so important an organization. A grooming process should be going on at all times with increasing responsibility being given to those who might well become future leaders.

Membership: Who should be members? What are the requirements for active members? What are the particular talents of auxiliary members and how can we most widely and wisely utilize these talents?

Orientation and Education: A great deal can be done to educate communities in the importance of the work we are doing. Most physicians will be happy to address groups on various aspects of medical care and their specialties. Auxiliary meetings should be more than just social get-togethers. We should have as our goal: "Education of the community, the building of a good auxiliary organization and the development of a better understanding of medical problems in the world today."

Objectives: What are the particular needs of the auxiliary at this particular time? What problems require our most careful consideration this year? Definite objectives should be set up. These could be programs for strengthening and developing the auxiliary, A.M.E.F., Legislation, S.A.M.A., Community Relations, Health Careers, fund-raising. It is infinitely more rewarding and effective to raise dollars when a plan has been formulated and an objective is in sight than to proceed in a haphazard fashion.

Together let us make this the theme for the year: Make no little plans, aim high in hope and work, always remembering that a noble, logical program, once recorded, will never die, but long after our year will be a living thing asserting itself with ever-growing insistency.

It is my hope that you will make big plans in auxiliary work, and when the time comes, look back to evaluate and assess the efforts and results. Then look ahead toward greater implementation of your plans.

Thank you for the opportunity of appearing before you today. Thank you for your loyalty to the Woman's Auxiliary to the California Medical Association, and above all, thank you for making us one of the most important organizations in California.

Mrs. Lawrence R. Custer
President, Woman's Auxiliary to the
California Medical Association

Presidential Address, Los Angeles, May 2, 1961.

From the Prentice-Hall, Inc.
Lawyer's Weekly Report
dated February 13, 1961

INFORMATION

"Seminar Expenses"

WARNINGS have been given here before on the need to look into the deductibility, for tax purposes, of expenses incurred in taking cruises or foreign trips where some provision is made for professional seminars, visits to hospitals, etc.

At the expense of being repetitious, such a warning is again issued. The Internal Revenue Service is taking a very close look these days at all types of deductions and "seminar cruises" offer the service a fertile field for disallowing expenses.

This opinion has now been backed up by Prentice-Hall, Inc., law publishers of Englewood Cliffs, N. J. This organization publishes the *Lawyer's Weekly Report*, which is widely circulated among attorneys as a digest of recent court and tax rulings. A recent issue of this publication carried an item which so directly touches on the subject of educational-vacation cruises that it is reprinted here, with permission of the publishers.

Professional or business "seminar" cruises. Much pleasure, little work, means little deduction. Beware of travel brochures promising deductibility—they may not deliver.

In his morning mail Dr. Hoover found an attractive brochure describing a "Medical Seminar" given by five distinguished professors of Duke University. The seminar was to be conducted aboard the S.S. *Vulcania* while sailing from New York to Venice. One eye-catcher in the brochure was this statement: *"The cost of attending is a deductible expense when computing taxes."*

That sold Dr. Hoover. He signed up for the cruise. Aboard ship he attended the medical lectures. They lasted about 55 minutes (plus discussion periods) on 6 or 7 days of the 18-day cruise. When the ship put in at various ports, he visited places of historic interest, such as the ruins of Pompeii. He deducted $1,881.86, the entire cost of the seminar cruise, as a business expense.

The tax court found that Dr. Hoover's primary purpose in going on the cruise was to have a vacation—education was secondary. It noted the small portion of the total time that was spent at lectures and medical discussions. Comparable courses given at medical centers (for fees averaging $32) take only 4 days to complete. So the court performed major surgery on the deduction—only $232 was deductible as the education expense portion of the total cost (Hoover, 35 TC No. 60).

Comment. Of course, the cost of education which helps you maintain or improve skills in your present job is deductible. And this includes the expenses of traveling. For example, had Dr. Hoover gone from his home in Columbus, Ohio, to Duke University, in North Carolina, to attend a medical seminar, all his costs — transportation, meals, lodging, tuition — would have been deductible. If he then took a sightseeing trip from Duke to the mountains of Western North Carolina, the cost of this side trip would be personal and nondeductible.

Caution. IRS has just issued this specific warning: Be wary of advertisements that promise tax deductions for pleasure tours masquerading as professional seminars. *Reason:* Here, the primary purpose of the trip might not be education (News Release, IR-357, Jan. 30, 1961).

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

Dr. Kenneth H. Sutherland, former assistant health officer, became Los Angeles County health officer last month, succeeding **Dr. Roy O. Gilbert** who retired after 31 years of service with the department. Before coming to the Los Angeles County Health Department more than 20 years ago, Dr. Sutherland was health officer of Orange County.

* * *

Dr. L. S. Goerke has been appointed dean of the School of Public Health of University of California at Los Angeles. Dr. Goerke has been associate dean of the statewide University of California School of Public Health since 1956 and his new appointment follows a recent announcement of the establishment of a separate school at U.C.L.A. Before becoming a member of the faculty of the U.C.L.A. School of Medicine in 1954, the new dean had been health officer of Yolo County in 1940 and, after time out for Army Medical Corps duty in World War II, was medical director of the Los Angeles City Health Department.

* * *

Dr. Roger O. Egeberg, medical director of the Los Angeles County Department of Charities, has been appointed to the State Board of Public Health by Governor Brown. He succeeds Dr. Erroll R. King of Riverside. The appointment does not interfere with Dr. Egeberg's Los Angeles County position.

* * *

Dr. Leo Rangell, Beverly Hills, was elected president of the American Psychoanalytic Association at the annual meeting in Chicago last month.

SAN FRANCISCO

Mrs. Ernest Lilienthal, San Francisco, has been appointed for a four-year term on the **State Board of Public Health** by Governor Brown. Her term will end January 15, 1965. Mrs. Lilienthal, who last year served on the Governor's Committee on the Study of Medical Aid and Health in California, replaces Mrs. P. D. Bevil of Sacramento, whose term expired January 15, 1961.

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Dr. Alfred Auerback, San Francisco, was elected to a three-year term on the governing council of the American Psychiatric Association at the annual meeting of the organization last month in Chicago.

* * *

Dr. Karl F. Meyer, director emeritus of the University of California's George William Hooper Foundation for Medical Research, has received this year's Jessie Stevenson Kovalenko Medal for outstanding contributions to medical science. The National Academy of Sciences medal was presented to Dr. Meyer in Washington April 24, in recognition of his achievements as an investigator, teacher, and administrator for over half a century.

VENTURA

Dr. Arlo A. Morrison, Ventura, has been chosen president-elect of the National Association of Blue Shield Plans. The Chicago headquarters of the organization announced that he will assume the post as president early next year.

Dr. Morrison, a past president of the California Medical Association, has been active in many phases of prepaid medical care, having served for the past nine years on the Board of Trustees of California Physicians' Service. He has just completed a term as C.P.S. president, and during 1959-1960 held office as C.P.S. president and chairman of the board simultaneously. He is currently president of the Western Conference of Prepaid Medical Service Plans, and is an alternate delegate to the American Medical Association.

GENERAL

The 24th annual exhibition of **The American Physicians Art Association** will be held from June 26 to 30 in New York City in conjunction with the annual meeting of the American Medical Association. The exhibit will include works of sculpture, painting, crafts and photography by physicians throughout the United States.

Further information can be obtained from Dr. Alfred A. Richman, secretary, 307 Second Avenue, New York 3, N. Y.

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A wine research award has been established by the Society of Medical Friends of Wine to stimulate additional research into the uses of wine in medicine.

The award of $1,000 is offered to individuals or institutions who have conducted and published original research of conspicuous value in one of the following respects: (a) In identifying substances in wine, (b) in ascertaining the effects of components of wine on living cells, tissues or organs, or (c) in indicating appropriate clinical applications of wine in the treatment or prevention of disease.

The Society's Research Committee, of which Dr. Hilliard J. Katz, San Francisco, California, is chairman, will consider outstanding contributions and nominate possible recipients. The final selection will be determined by the Society's membership and its board of governors.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Office Surgery. Saturday, June 17. Six hours lecture, four hours lab. Fee: Lecture and lab, $40.00; Lecture only, $25.00.

Dermatology in Clinical Practice. Monday and Tuesday evenings, 7:30 to 10:00 p.m., July 10 and 11. Fee: $25.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Thirteen hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead. Fee: $137.50 (includes room and meals).

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Advanced Seminars in Internal Medicine. Sunday through Wednesday, August 6 through 9. University Conference Center, Lake Arrowhead. Fee: $137.50 (includes room and meals).

Lower Extremities Prosthetics. Monday through Friday, September 25 through 29. Fee: $125.00.

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Medical Symposium on Cerebral Palsy. Friday, June 30. Seven hours. No fee.

Obstetrics and Gynecology. Thursday through Saturday, September 14 through 16. Twenty-one hours. Fee: $40.00.

Internal Medicine—A Selective Review. Monday through Friday, September 18 through 22. Thirty-five hours. Fee: $20.00 per day or $90.00 per week.

Neuropsychiatry in General Practice. Thursdays, September 28 through November 2. Fee: $5.00.

A Clinic on Human Disabilities. Friday and Saturday, September 29 and 30. Fourteen hours.*

Evening Lectures in Medicine. Oakland Hospital, Tuesday evenings, October 3 through November 21. Fee: $35.00.

Bone: Clinical Application of Recent Advances. Saturday through Monday, October 7 through 9. Twenty-one hours. Fee: $50.00.

Urology. Thursday through Saturday, October 12 through 14. Twenty-one hours. Fee: $50.00.

Problems Due to Infection in Medicine and Surgery. Saturday and Sunday, October 28 and 29. Fourteen hours. Fee: $25.00.

Problems of Adolescence. Children's Hospital, Saturday, November 4. Seven hours. Fee: $12.50.

Alcohol and Civilization. Saturday through Monday, November 11 through 13. Twenty-one hours. Fee: $25.00.

Psychiatry in General Practice. Napa State Hospital, Saturday and Sunday, November 18 and 19. Fourteen hours. Fee: $25.00.

Surgery of the Hand and Forearm. Friday through Sunday, December 1 through 3. Twenty-one hours. Fee: $50.00.

External Diseases of the Eye. Thursday through Saturday, December 7 through 9. Twenty-one hours. Fee: $50.00.

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Use of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Conference on Strabismus. Wednesday through Friday. July 26 through 28. Limited enrollment. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303 or 414.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advanced Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Intensive Review of Internal Medicine. Monday through Friday, September 11 through 22, 8:30 a.m. to 12:30 p.m., Los Angeles County Hospital. Fee: $65.00.

Recent Advances in Medicine. Thursday and Friday, November 9 and 10, Statler Hotel, Los Angeles.*

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

Alumni Postgraduate Convention. March 13 through 15, 1962, Ambassador Hotel, Los Angeles. *Contact:* Kenneth H. Abbott, M.D.

For information contact: Office of the Dean, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

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*Fee to be announced.

†Hours and fees to be announced.

CALIFORNIA MEDICAL ASSOCIATION

POSTGRADUATE INSTITUTE—1961

Sacramento Valley Counties, June 30 and July 1, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of California Medical Association, offers a subscription series of hour-long tape recordings condensing highlights of important literature and leading national meetings. Designed to be heard in the automobile, home or office. Six different services are offered —General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, and Anesthesiology. Also, just compiled and released is a Catalog of Classics, offering panel discussions and symposia on specific subjects in all specialties. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

SUMMER MEETINGS

Western Branch, American Public Health Association Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

Idaho State Medical Association 69th Annual Meeting, Sun Valley, Idaho, June 28 through July 1. *Contact:* Mr. Armand L. Bird, executive secretary, Sonna Building, Boise, Idaho.

Los Angeles Academy of General Practice Medical Seminars for General Practitioners. University Residential Conference Center, Lake Arrowhead, July 8 through 12. *Contact:* Gordon Beckner, M.D., program chairman, 1704 West Manchester, Los Angeles 45.

Nevada State Medical Association 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23 through 26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

Pacific Dermatologic Association Annual Meeting. Hotel Utah, Salt Lake City, Utah, August 30 through September 2. *Contact:* Edward J. Ringrose, M.D., secretary-treasurer, 2828 Telegraph Avenue, Berkeley 5.

SEPTEMBER MEETINGS

National Kidney Disease Foundation First Professional Kidney Symposium, Ambassador Hotel, Los Angeles, September 13, 9:00 a.m. to 5:00 p.m. Fee: $12.50 (includes lectures and lunch). *Contact:* Mrs. Jean Gordon, administrative assistant, 1227½ South La Brea, Los Angeles 19.

St. John's Hospital Postgraduate Assembly. September 14 through 16. St. John's Hospital, 1328 22nd St., Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

Washington State Medical Association Annual Convention. September 17 through 20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

San Francisco Heart Association 31st Annual Postgraduate Symposium. September 27 through 29, St. Francis Hotel, San Francisco. *Contact:* Gene Taylor, executive director, 259 Geary Street, San Francisco 2.

California Society of Internal Medicine Annual Meeting. September 29 through October 1. Hotel del Coronado, Coronado. *Contact:* Philip L. Pillsbury, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

OCTOBER MEETINGS

Kaiser Foundation Hospitals in Northern California Fifth Annual Symposium on Immunology and Autoimmune Disease. October 6 and 7, Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., director of medical education, 280 West MacArthur Blvd., Oakland.

Western Industrial Medical Association Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

Los Angeles County Heart Association Professional Symposium. October 11 and 12. 9 a.m. to 5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

California Academy of General Practice 1961 Scientific Assembly. October 15 through 18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

West Coast Psychoanalytic Societies Meeting, Beverly Hills, October 21 and 22. *Contact:* Executive Secretary, Los Angeles Institute for Psychoanalysis, 344 North Bedford Drive, Beverly Hills.

St. Jude Hospital Postgraduate Assembly, Fullerton, October 22, all day beginning at 8:30 a.m. *Contact:* B. L. Tesman, M.D., St. Jude Hospital, Fullerton.

American Society of Anesthesiologists, Inc., October 22 through 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

San Diego County Heart Association Eleventh Annual Symposium. San Diego Veterans War Memorial Building, October 27 and 28. *Contact:* O. M. Avison, executive director, 3545 Fourth Avenue, San Diego 3.

NOVEMBER MEETINGS

American College of Physicians Southern California Region Annual Basic Science Lecture. Statler Hilton, Los Angeles, November 1, 6:30 p.m. *Contact:* George C. Griffith, M.D., governor, Box 25, 1200 North State Street, Los Angeles 33.

San Diego County General Hospital Fifteenth Annual Postgraduate Assembly. November 1 and 2. No registration fee. *Contact:* David E. Wile, M.D., chairman, San Diego County General Hospital, San Diego.

Los Angeles Pediatric Society (of Los Angeles County Medical Association) Annual Brennemann Lecture Series. Ambassador Hotel, Los Angeles, November 8 and 9. *Contact:* Neil N. Litman, M.D., vice-president, 9209 Sixth Avenue, Inglewood 4.

Pacific Coast Fertility Society Tenth Annual Meeting, El Mirador Hotel, Palm Springs, November 9 through 12. *Contact:* Gregory Smith, M.D., secretary, 909 Hyde Street, San Francisco 9.

San Diego Chapter, California Academy of General Practice Fifth Annual Meeting. November 9 through 11, Riviera Hotel, Las Vegas. *Contact:* George H. Burkhart, M.D., 514 Third Ave., Chula Vista.

Western Surgical Association, November 29 through December 1, St. Francis Hotel, San Francisco. *Contact:* Walter W. Carroll, M.D., secretary, 700 N. Michigan Ave., Chicago 11.

DECEMBER MEETINGS

American College of Chest Physicians Seventh Annual Postgraduate Course on Diseases of the Chest. December 4 through 8, 9:00 a.m. to 5:00 p.m. daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.

1962 MEETINGS

American College of Surgeons Sectional Meeting. Statler-Hilton and Biltmore Hotels, Los Angeles, January 29 through February 1. *Contact:* William P. Longmire, Jr., M.D., local chairman, UCLA Medical Center, Los Angeles 24.

Tuberculosis and Health Association of California Annual Meeting. San Diego, February 7 through 10. *Contact:* Mrs. Dalarie Lichtensteiger, 130 Hayes Street, San Francisco.

American College of Physicians Southern California Region Annual Regional Meeting. El Mirador Hotel, Palm Springs, February 16 through 18. *Contact:* George C. Griffith, M.D., governor, Box 25, 1200 North State Street, Los Angeles 33.

Pacific Coast Surgical Association Annual Meeting. Sheraton Hotel, Portland, Oregon, February 18 through 21. *Contact:* Carleton Mathewson, M.D., Presbyterian Medical Center, San Francisco.

International College of Applied Nutrition Annual Convention. Huntington-Sheraton Hotel, Pasadena, March 22 and 23. *Contact:* Donald C. Collins, M.D., secretary, Suite 503, 7046 Hollywood Blvd., Hollywood 28.

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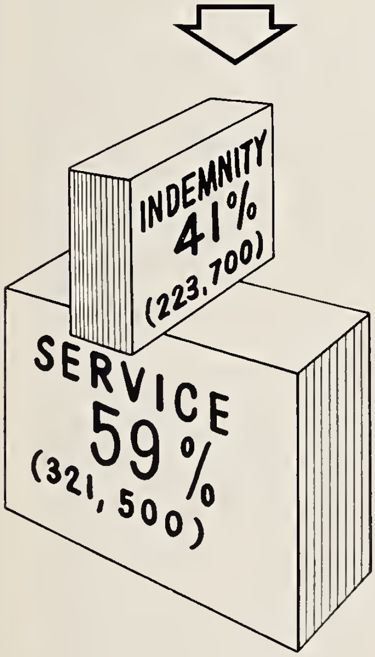
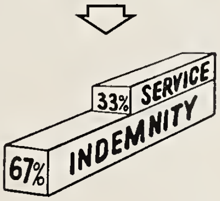
*59% of 545,200 Federal Employees and Dependents in California Choose 'Service'

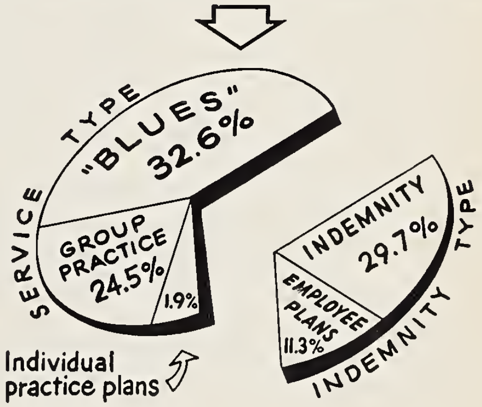


*Source: U. S. Civil Service Commission

Health Plan Type Selection by Californians Generally



Distribution of Enrollment of Federal Employees by Types of Health Plans



SUPPLEMENTAL DATA:

- More than 93% of Federal employees nationally and more than 90% of them in California now have some form of health care coverage.
- Total U. S. Federal employee-dependent enrollment: 5,173,465.
- 4 out of 5, nationally, selected high option benefits.
- In California, more than 9 out of 10 Federal employees who enrolled in group practice plans are in Kaiser Foundation Health Plan.
- Virtually all 10,100 California Federal employees and dependents enrolled in individual practice plans are in the Federation for Foundations for Medical Care.

—Prepared by CMA Bureau of Research & Planning

THE PHYSICIAN'S *Bookshelf*

PROGRESS IN THE TREATMENT OF FRACTURES AND DISLOCATIONS — 1950-1960 — Thomas B. Quigley, M.D., Assistant Clinical Professor of Surgery, Harvard Medical School; Surgeon, Peter Bent Brigham Hospital; and Henry Banks, M.D., Clinical Associate in Orthopedic Surgery, Harvard Medical School; Associate in Orthopedic Surgery, Peter Bent Brigham Hospital. W. B. Saunders Company, Philadelphia, 1960. 102 pages, $2.50.

Over 400 articles were selected for this 100-page review. The first 10 pages are devoted to a discussion of the general principles in the treatment of all fractures. There has been increasing attention to rehabilitation of the patient. More open reductions are being done, the quality of metallic inserts has been improved, there is much more extensive use of intramedullary splinting with corresponding decrease in the number of plates used. Replacement parts except for the head of the femur have practically disappeared. Antibiotics are no substitute for good surgical technique. Most fractures can be successfully treated by closed reduction and splinting. The decade witnessed the first unsuccessful attempt to use "bone glue." No advance has been made in our attempts to shorten the healing time either of soft tissue wounds or of fractures.

The main portion (70 pages) of the small volume deals with specific fracture problems beginning with the clavicle and ending with the bones of the foot. It is now obvious that the problem of habitual dislocation of the shoulder has been solved. There is still no completely satisfactory solution for the comminuted fracture dislocation of the shoulder joint. Contrary to some statements in text books, certain types of fractures of the humerus can be difficult. The so-called hanging arm cast, especially when used in elderly, weak muscled people, can result in distraction and nonunion. Early active motion is accented in the articles on injuries to the elbow joint. The indications and contraindications for operation in fracture of the radial head are clearly defined. The authors have recently treated 12 "shattered" elbows by open reduction with results "good enough to justify continuation of the clinical study."

For fractures of the forearm bones (adult) most authors are now recommending open reduction and internal fixation with marrow rods and addition of cancellous bone grafts at the fracture site. A long arm plaster cast for 12 to 16 weeks is essential. During the past 10 years there has been greater interest in hand injuries. More surgeons have learned the principles involved in their treatment but little if any change or advance has been made. This last statement can also be made about the treatment of spinal injuries.

For intracapsular fracture of the hip in younger people internal fixation is still the method of choice but many orthopedic surgeons are now doing primary prosthetic replacement operations in those of 70 or older. For complications such as irreducibility, nonunion and aseptic necrosis the prostheses have been successful in a high percentage of cases. Practically all orthopedic surgeons writing on fractures in and around the hip are now recommending internal fixation for intertrochanteric fractures.

Probably one of the greatest advances during the past 10 years is the clarification of the indications and techniques for the treatment of fractures of the shaft of the femur by intramedullary fixation. A number of excellent papers on this subject are reviewed.

During this same decade the enthusiasm for complete patellectomy has cooled somewhat, while at the same time it seems well established that when the internal collateral ligament is torn probably the anterior cruciate and internal meniscus are also involved and prompt surgical repair is in order.

A number of papers on open reduction treatment of tibial fractures (both bones) with insertion of various metallic devices have appeared. I think the authors' confusion about the treatment of these fractures is well exemplified by their statement, "It is to be hoped that the next progress report ten years hence will present a clearer definition of the indications and contraindications for the various methods of management of this common, difficult and treacherous fracture problem."

The decade has also seen an even firmer realization that the fractured ankle must be restored to perfect position if a satisfactory result is to be anticipated. The number of open reductions has increased enormously. Another important point has been the repeated stressing of the necessity for a long above-the-knee cast if displacement is to be prevented.

Finally the authors point out that some 10 years ago many hospitals were enthusiastically establishing bone banks but this interest has waned considerably. The patient's own bone is best.

This review is an invaluable contribution. It permits the busy surgeon to review in an hour or two the best that was written on fractures during the past decade. The articles reviewed have been well selected, the reviews are written in an interesting style, and above all one gets the opinions of the authors, obviously men of great experience and stature in this field.

Don King, M.D.

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PROTEIN AND AMINO ACID REQUIREMENTS IN EARLY LIFE—L. Emmett Holt, Jr., M.D., Department of Pediatrics, New York University; Paul György, M.D., Department of Pediatrics, University of Pennsylvania; Edward L. Pratt, M.D., Department of Pediatrics, University of Texas; Selma E. Snyderman, M.D., Department of Pediatrics, New York University; and William M. Wallace, M.D., Department of Pediatrics, Western Reserve University. New York University Press, Washington Square, New York 3, N. Y., 1960. 63 pages, $1.00 paper edition.

Students of nutrition, rather than clinicians, will find this evaluation of our present knowledge concerning protein and amino acid requirements in infancy and early childhood of interest. It is also hopefully aimed at the industry which has largely taken over the responsibility for giving dietary advice in these years. Minimal and optimal requirements are dealt with, as well as potential results of excessive feeding of protein. The picture of clinical protein deficiency, kwashiorkor, is also presented.

MEDICAL HISTORY-TAKING—Ian Stevenson, M.D., Professor of Psychiatry and Chairman, Department of Neurology and Psychiatry, University of Virginia School of Medicine. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 273 pages, $6.50.

Although this book was designed for medical students it could be read with profit by many young physicians and some older ones. Dr. Stevenson deals with medical history-taking from three aspects. The first of these has to do with the physician-patient relationship and the process of the medical interview, that is, what it is that goes on between patient and physician in the interview. The next section of the book deals with the components of the history, and covers its various headings and the kinds of information that ought to be obtained in each of the headings of the medical history. The third and longest part of the book has to do with the technique of history taking and deals with the technical problems of guiding the interview, helping patients to talk freely, common problems in history taking techniques and various difficulties or special problems in interviewing patients. Textual descriptions and explanations are heavily interspersed with examples of good and bad techniques.

This is an exhaustive book, covering all aspects of history-taking in a fair amount of detail. On the one hand, this makes it more useful, since it covers the subject rather completely. On the other hand, for medical students its very completeness may tend to give them some feeling of being overwhelmed by a process whose complexity is frightening, as they approach their initial medical interviewing. For the physician in practice, the book's exhaustiveness may again pose a problem, since the busy physician may balk at reading so detailed a book on a subject he probably feels he is already amply competent in. In spite of this, it would probably be worth his time. Though he is probably familiar with most of the material covered by the book, this reviewer's observation of interviews conducted on rounds by fairly experienced physicians has conveyed to him the awareness that many common errors are made even by the experienced.

Dr. Stevenson is a psychiatrist. Although his book deals with medical history-taking it is clearly written from the point of view of a psychiatrist, with a fair amount of weighting of material pertinent to the psychological aspects of illness, both psychiatric and structural. This point is mentioned here not because the book is less applicable to medical history taking for this reason; but really because a casual glance might imply that it is primarily for the physician interviewing a patient with "functional" disease.

All in all, this is a book which can unhesitatingly be recommended for medical students and which might well be made a part of their required reading.

D. A. Schwartz, M.D.

* * *

FUNDAMENTALS OF NERVE BLOCKING—Vincent J. Collins, M.S., M.D., Associate Professor of Anesthesiology, New York University Medical Center and Anesthesiologist, Bellevue Hospital Center. With the Assistance of Emery Andrew Rovenstine, M.D., Professor of Anesthesiology and Chairman of Department of Anesthesiology, New York University Medical Center and Director Division of Anesthesia, Bellevue Hospital Center. Lea & Febiger, South Washington Square, Philadelphia 6, Pa., 1960. 354 pages, $9.50.

In this comparatively small volume the author presents the techniques and experiences of the Nerve Block Clinic of Bellevue Hospital. In carrying out his task Dr. Collins offers a considerable amount of information in a somewhat tabulated form.

The title is misleading inasmuch as considerable wordage is devoted not only to nerve block methods but to other diagnostic and therapeutic aspects of pain problems. It is in this latter approach that this book leaves much to be desired.

The reviewer does not take issue with the author's ability to block nerves with the various chemical agents but, rather, with the indications for some of these techniques. For example, in discussing gasserian ganglion block he states that in advancing the needle through the foramen ovale the "subdural space" may be entered and cerebrospinal fluid obtained. Furthermore, it is stated that the needle may penetrate the brain substance but no harm occurs. No mention is made of the multiple and permanent nerve palsies that result from the inadvertent injection of alcohol into the subarachnoid space.

In the discussion of trigeminal branch blocking the author refers to injection of "the anesthetic solution" and fails to differentiate between the relatively innocuous anesthetic solutions and more destructive ethyl alcohol. If alcohol was used in the recommended volumes serious complications could ensue.

Alcohol block is recommended as one form of treatment for glossopharyngeal neuralgia. This procedure is not justified because of the danger of paralyzing the vagus and accessory nerves and the sympathetic branch which lie in close proximity.

Posterior rhizotomy, chordotomy and lobotomy are mentioned as surgical techniques used to relieve postherpetic neuralgia. Experienced neurosurgeons do not use these ineffective methods.

In many instances the nerve block techniques are insufficiently detailed to be of value to the novice. Experienced anesthesiologists would prefer the more standard reference works on the subject. There are many inaccuracies in the spelling of proper names and anatomical terms and in some definitions (torticollis is described as "pain in the neck"). Finally, the grammatical construction leaves much to be desired. This reviewer finds it difficult to recommend this book.

Robert H. Pudenz, M.D.

* * *

THE HAND—A MANUAL AND ATLAS FOR THE GENERAL SURGEON—Henry C. Marble, M.D., F.A.C.S., Consulting Surgeon to the Massachusetts General Hospital. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1960. 207 pages, $7.00.

The author of this small text has had a world of experience over many years in dealing with injuries of the hand. He has always been active in the teaching of medical students and house officers. Now, as a senior in the field of hand surgery, he has reviewed and sifted as it were, his experiences to record in this text the principles and procedures he considers time proven.

The book covers anatomy, applied physiology, open and closed injuries, infections and tumors of the hand, along with points on history-taking, recording, and splinting. Special emphasis is given to the principles of primary care, a thesis which can never be overemphasized. The illustrations are all line drawings in type and thus depict diagrammatically and well the particular point being emphasized. This type of illustrating in many ways is far superior, from a teaching standpoint, to multiple photographs of individual cases.

Other specialists in the field would find a few minor points for disagreement or discussion which is only natural, but for students, house officers, and those in practice who have occasion to treat hand injuries this book is a firm, first stepping stone to the understanding of the problems involved.

Lot D. Howard, Jr., M.D.

CLINICOPATHOLOGICAL CONFERENCES OF THE MASSACHUSETTS GENERAL HOSPITAL — Selected Medical Cases—Benjamin Castleman, M.D., Chief, James Homer Wright Pathology Laboratories, Massachusetts General Hospital, and Clinical Professor of Pathology, Harvard Medical School; and H. Robert Dudley, Jr., M.D., Assistant in Pathology, Massachusetts General Hospital, and Instructor in Pathology, Harvard Medical School. Little, Brown & Company, Boston 6, Massachusetts, 1960. 295 pages, $12.50.

The clinical pathological conference—the C.P.C.—is now an established and integral part of the medical curriculum. In some institutions the C.P.C. is looked on rather as a sporting exercise with the pathologists "out to get" the clinicians. This is, however, a purely secondary objective, the real purpose of the exercise being to keep up the students' (and the graduates') interest in continuing to see the morbid anatomy of disease at a time when there would otherwise be little opportunity.

Doctors owe a great debt of gratitude to the *New England Journal of Medicine* for its labors through the years in presenting regularly one or two cases in the form of a C.P.C. These have been prepared with meticulous care and with good judgment. One physician presents the clinical analysis with very little help from others; we have seen C.P.C.'s elsewhere in which ten or more specialists have been called on each to discuss a small specialized point, a ridiculous procedure which leads only to lost motion.

This volume contains reprints of fifty selected cases presented at the C.P.C.'s of the Massachusetts General Hospital over a period of twenty-five years; in many instances the original discussor has added comments many years later. The introduction sketches the history of the C.P.C. and Dr. Richard Cabot's part in developing it. The exercise seems promptly to have become popular; at any rate C.P.C.'s under Osler and MacCallum were in full swing at Johns Hopkins as early as 1907 and were made locally famous by the astonishing clinical acumen first of W. S. Thayer and later of L. W. Hamman.

Dr. Castleman and Dr. Dudley have edited the present volume with excellent judgment and it will stand as a fine memorial to those who have become prime movers from Cabot on, in these weekly presentations.

ARTHUR L. BLOOMFIELD, M.D.

* * *

MODERN OCCUPATIONAL MEDICINE—2nd Edition—Thoroughly Revised—A. J. Fleming, M.Sc., M.D., F.A.C.P., Medical Director, E. I. du Pont de Nemours & Company, and C. A. D'Alonzo, M.D., F.A.C.P., Assistant Medical Director, Medical Division, E. I. du Pont de Nemours & Company, Editors. J. A. Zapp, Ph.D., Director, Haskell Laboratory for Toxicology and Industrial Medicine, E. I. du Pont de Nemours & Company, Associate Editor. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1960. 587 pages, $12.00.

In addition to the editor and his associate editors there are nineteen other contributors to this book, all of whom are on the medical or research staff of E. I. du Pont de Nemours and Company. Seldom has a textbook in medicine been a "family affair" of such proportion. Each member contributes from his field of interest. The book is divided into eight sections, each section having a varying number of chapters dealing with various subjects.

A few years ago this reviewer, along with a number of physicians practicing industrial toxicology, was the guest of the du Pont Company on the occasion of the dedication of its Haskell Laboratory for Toxicology and Industrial Medicine. There we witnessed the clinician, toxicologist, chemist, pathologist, physiologist, hygienist and biostatistician engaged in an integrated program designed to protect the industrial worker and the public against the hazards of chemical intoxication. Much of this book relates the manner in which this is done.

This reviewer cannot enumerate completely the list of chapter titles. A few of these are: Research; toxicological methods and plant surveys; protective clothing for the chemical industry; immunization in industry; physiology of muscular work; practical application of stress in industrial jobs; rehabilitation of the alcoholic in industry; sanitation, water supply and pollution; safety in industry.

Approximately fifty pages are devoted to mental health, application of psychiatry to industry and emotional factors in skin disease.

In Chapter VIII is found a dictionary of toxic compounds. Here is a most complete listing of innumerable chemicals from acrolein to zinc chloride. Unfortunately this wide gamut does not permit a detailed clinical description of toxic states resulting from undue exposure to the majority of the chemicals listed. Most interesting is the chapter entitled "Emerging Environmental Hazards" with its illuminating consideration of the manner in which the human body copes with small doses of toxic materials. One statement—"kernel toast and charred meat contain traces of well known carcinogens" recalls to the reader's mind the occasional episodes of unfounded fear in the public mind such as the fairly recent cranberry scare.

Modern Occupational Medicine contains numerous graphs and charts. With but two exceptions the illustrations are confined to the subject of occupational chest diseases. Here the reproduction of x-ray films and histopathologic material is most excellent. The radiographic reproduction *actually* reveals clearly the pathology that exists. This quality is not common to most textbooks.

This book is an excellent ready reference with especial value for plant physicians and particularly so for those engaged in the chemical industry. As previously intimated, the student, general industrial physician and general practitioner will find it lacks, in most instances wherein toxicity is discussed, the complete clinical approach, that is, a consideration of signs, symptoms, treatment and prognosis (estimation of disability).

RUTHERFORD T. JOHNSTONE, M.D.

* * *

ANTISERA, TOXOIDS, VACCINES AND TUBERCULINS IN PROPHYLAXIS AND TREATMENT—Fifth Edition—H. J. Parish, M.D., F.R.C.P.E., D.P.H., Clinical Research Director, Wellcome Foundation Ltd.; formerly Bacteriologist, Wellcome Research Laboratories; and D. A. Cannon, O.B.E., M.B., B.Sc., D.T.M. & H., Medical Adviser, Wellcome Research Laboratories, Beckenham, Kent; formerly Chief Pathologist, Federal Medical Department, Nigeria. The Williams & Wilkins Co., Baltimore 2, Maryland, exclusive U. S. agents, 1961. 288 pages, $8.50.

This is a "classical" review of biologic products by a scientist who has had very close contact with problems of manufacture, standardization, and development of such materials in England. From the standpoint of the practicing physician, some features of the book will be found "quaint," e.g., the detailed description how to inject and bleed a horse, with photographs of a horse hooked up to a bottle. Many descriptions of specific products include a good deal of detail which is usually supplied in the United States as "package insert" by the individual manufacturer and which frequently varies with time of supply and source. On the other hand a wealth of valuable information is supplied regarding properties and uses of biologic products which appear to be both accurate and reasonably up to date. I doubt that many physicians will have this book in their offices but I feel it should be available in hospital libraries for ready reference. Few doctors will want to read the entire book but many may want to look up a specific point rapidly.

ERNEST JAWETZ, M.D.

DUNHAM'S PREMATURE INFANTS—Third Edition—William A. Silverman, M.D., Associate Professor of Clinical Pediatrics, College of Physicians and Surgeons, Columbia University; Director of the Premature Nursery, Babies Hospital, New York, N. Y. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1961. 578 pages, $15.00.

This third edition is a great improvement over the second. The format has been completely rearranged so that the interest of the reader is held from the very beginning. On every page, the subject matter stands out sharply separated from previous data by a bold title which awakens in the reader a wish that all medical texts could be so written and printed. Tables, charts, figures and drawings abound and stand out in bold relief. The 578 pages are not the result of verbosity but are due to the separation of each subject which is discussed briefly but sufficiently to give the reader full understanding of problems pertaining to the premature infant.

In rearranging the second edition Dr. Silverman has provided the physician caring for prematures a comprehensive guide to every aspect of antenatel, perinatal and postnatal care. The dangers that beset the premature by inheritance, when in utero, in delivery room or the nursery are discussed whether of physiological, infectious or surgical nature. Besides the usual methods of care that are discussed in older books on the premature, such subjects as pneumomediastinum, pneumothorax, respiratory distress syndrome, neonatal bilirubinemia and the effect of the diabetic mother upon the premature have prominent space.

The book is divided into three sections with general, clinical and public health considerations placed in that order. In the second edition the public health and statistical aspect occupied so much space, as well as abnormal conditions affecting older infants, that the problems of the premature as met by the attending physician held a place of secondary importance. In this third edition these aspects have assumed their proper position. Each of the 26 chapters is supported with a very extensive bibliography. This reviewer considers this book one of the best and most up-to-date treatises on prematures that it has been his privilege to read. It is of interest to the practicing physician, the public health official and the statistician.

E. Earl Moody, M.D.

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OFFICE DIAGNOSIS—Paul Williamson, M.D.; With Illustrations by Ann Williamson. W. B. Saunders Company, Philadelphia, 1960. 470 pages, $12.50.

This is a much more highly personal volume than most medical books. It was conceived as a new approach to the problem of practical office diagnosis for the general practitioner. It is not a compendium of diagnostic techniques and maneuvers but a series of articles telling how the author handles or would handle patients with various symptoms or diagnoses.

He presents office diagnosis as a personalized discipline. His primary assumption is that it partakes of philosophy and art as much as it does of science. Feeling that the latter is well covered, he concentrates on the former points.

Doctor Williamson anticipates that his book may evoke strong disagreements and he is right. This reviewer agrees with many of the generalities and with the much seasoned philosophy. For example, the section on hypotension (page 67) is succinct and complete. On the other hand, there are times when the writing rambles without getting any place, as in the discussion on the silent coronary (page 233).

In a number of places the reviewer is confronted by the conclusion that his practice is somehow different from that of the author and takes Section II on dermatologic symptoms as illustrative of this. Doctor Williamson mentions that eruptions caused by drugs or other chemicals are much more rarely seen than seborrheic dermatitis, pityriasis rosea or tineal manifestations. However, we find it to be far more common than pityriasis rosea (and on the other hand we have seen pityriasis more frequently in children than he apparently has).

Despite such disagreement we find "Office Diagnosis" an interesting book and feel that it can be of help to the doctor whose suspicion index is low or one who may feel that the laboratory test might replace his clinical faculties.

Edgar Wayburn, M.D.

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INTERNAL MEDICINE—A Physiologic and Clinical Approach to Disease—Second Edition—Robert P. McCombs, B.S., M.D., F.A.C.P., Professor of Graduate Medicine, Tufts University School of Medicine; Senior Physician, Pratt Diagnostic Clinic, New England Center Hospital; Diplomate, American Board of Internal Medicine. The Year Book Publishers, Inc., 200 E. Illinois Street, Chicago 11, Ill., 1960. 750 pages, $10.50.

The second edition of this small handbook of Internal Medicine has been considerably revised with the addition of brief considerations of newer concepts of metabolism (iron and magnesium), thyroid function, auto immunity, and diagnostic tests. Some newer therapies have also been added. Yet this book remains a barely adequate quick reference in Internal Medicine, as might be anticipated in a work as small as this.

For the past several months I have had this volume handy to look up different medical problems as they arose in practice or in my reading, and I have been disappointed more often than not at the lack of pertinent information or lack of any information at all. In most cases I found myself forced to consult a standard textbook in Internal Medicine, or a textbook in one of the medical subspecialties for the information.

Because of inadequate or incomplete coverage of most medical subjects this textbook is not recommended for the internist. However, it might prove useful to the busy general practitioner or the specialist in fields other than Internal Medicine as a handy and up-to-date source of medical information.

Daniel Gorman, M.D.

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INFECTIOUS DISEASES OF CHILDREN—Second Edition—Saul Krugman, M.D., Professor and Chairman, Department of Pediatrics, New York University School of Medicine, New York, N. Y.: Director, Pediatric Service, Bellevue Hospital Center, New York, N. Y.; Director, Pediatric Service, University Hospital, New York, N. Y.; and Robert Ward, M.D.; Professor and Head, Department of Pediatrics, University of Southern California School of Medicine, Los Angeles, Calif.; Physician-in-Chief, Childrens Hospital, Los Angeles, Calif. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1960. 398 pages, $13.00.

The revision of the first edition of this textbook, which originally appeared in 1958, was considered necessary largely because of recent advances in viral respiratory tract diseases. The recognized virus causes of respiratory infections has grown in a few short years from about five to more than forty. A new chapter entitled "Acute Respiratory Infections" attempts to bring some degree of order out of an area of etiologic chaos. There are new chapters on enteroviral infections, rabies and the adenoviruses and a new appraisal of oral poliomyelitis vaccine. The section on management of acute bacterial meningitis and staphylococcal infections has been reworked. All of the common acute contagious diseases of childhood, including the common cold, are discussed.

This well-edited and printed book could be used as a comprehensive text for the office of pediatricians, general practitioners and all who attend children having acute infections.

THE COMMONSENSE BOOK OF DRINKING—Leon D. Adams. With a Foreword by Morris Fishbein, M.D. David McKay Company, Inc., 119 West 40th Street, New York 18, N. Y., 1960. 210 pages, $3.95.

Mr. Adams has written an extremely informative book which should be a ready reference and a *must* on the bookshelf of every physician. This worthy companion to the Commonsense Book of Wine discusses the pertinent features of the drinking habits of Americans. Much of importance and interest is carefully and impartially presented with particular reference to the general reader as well as to the physician—all of whom wish to learn the facts about dietary beverages and beverage alcohol. The author has compiled a very useful book, weeding out folklore, summarizing, and emphasizing engaging facts. In addition, he alludes to wine as a tranquilizer.

The book gives a knowledgeful discussion of dietary and beverage alcohols and a thoughtful appraisal of them in our current culture. It answers what do we drink and why, and what one may expect from the different beverages—intimating perhaps that their effects are due to congener differences in the chemical composition of the beverages. In the last analysis, one's attitude toward dietary beverage alcohol is at best an acquired pattern into which very little original thought enters.

Physicians are interested in the health significance of food and dietary beverages because through them happiness is achieved. They are at one and the same time the cause of illness and the cure for it. In reference to "commonsense" attitudes concerning those who apply common sense to the art of living, this volume offers an explanation of attitude; and it outlines the wisdom which experience demonstrates to be quintessential in the area of man's most used and abused attributes. The chapter on "The Wisdom of Wine" is particularly appropriate. Wine drinking is a cult, and many live by the rules of cultists. This one is harmless in the sense that it is as old as civilization and civilization owes a great deal to the discovery of fermentation.

Salvatore P. Lucia, M.D.

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THE STRUCTURE AND DYNAMICS OF THE HUMAN MIND—Edoardo Weiss, M.D., Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 472 pages, $8.75.

Ever since 1923 when Freud laid down the basic structure of the mental apparatus in *The Ego and the Id*, psychoanalysts have elaborated on the genesis, functions and interrelationships of the components of the human mind in the light of fresh clinical experiences. This present volume by Dr. E. Weiss is a general presentation of the structure and dynamics of the human mind, not only the result of his experience in the "psychoanalytic movement" but more specifically his intimate association with Paul Federn over a span of four decades. This scholarly written book gives the student of psychiatry and psychology, as well as other workers in the field, an opportunity to become better acquainted with the "ego psychology" of Paul Federn and the extensive innovations of the author.

Section one of the book deals primarily with a preliminary survey of Federn's thesis that the ego be equated with ego feeling. The author emphasizes how the equation of the ego with ego feeling resolves many psychological phenomena, for example the various manifestations of psychosis, depersonalization, and estrangement. The following three sections of the book elaborate, in turn, on the three major components of the mental apparatus (ego, id, and superego). There is little attempt to present a consistent, systematic, or all-inclusive discussion of the functions, genesis, or interrelationships of the psychic substructures. This does not interfere, however, with the clarity of the presentation. In discussing the superego, the author diverges decisively away from Freud's formulation by separating the superego from the ego ideal and introducing the phenomenon of "psychic presence" as another factor that can generate guilt.

The fifth section of the book deals with the concept of ego defenses with important implications on the therapeutic management of repression, screen memories, and a variety of nosological entities. The final section of the volume is a discussion of the dream phenomenon and the dreaming ego. Of interest here is the fashion in which the ego functions in dreams, and the similarities of the dreaming ego and the schizophrenic state.

This book is an important and stimulating contribution to the field of ego psychology and an invaluable aid to those who deal with schizophrenic and allied states, or who are mainly concerned with the conscious part of human mentality in psychotherapeutic intervention. While many of the concepts are delineated in a dogmatic fashion, the theoretical discussions are well supported by poignant clinical examples as well as some freshly conceived hypothetical case material.

David Abrahams, M.D.

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KEY AND CONWELL'S MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS—Seventh Edition—H. Earle Conwell, M.D., F.A.C.S., Associate Professor of Orthopedic Surgery, University of Alabama School of Medicine, Birmingham, Ala.; and Fred C. Reynolds, M.D., Professor of Orthopedic Surgery, Washington University School of Medicine, St. Louis, Mo. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Missouri, 1961. 1153 pages, $27.00.

The Seventh Edition of this classical text in the American Literature on the Management of Fractures, Dislocations and Sprains has received quite a considerable revision. The general type of presentation has not changed. Conservative approach to the solution of fractures and dislocations has been continued and properly emphasized.

There is throughout the text, however, evidence of changes in most every part of the text to reflect newer concepts and knowledge.

The chapter on injuries of the hand is particularly well done, having been revised by Doctor Arthur H. Stein, Jr. This is the only part of the book that includes a bibliography at the end of the chapter and I think that a similar short bibliography might be worth while added to the remaining portion of the text as a whole following each individual chapter.

The section having to do with fractures of the jaw and related bones of the face is excellent.

It would be rather redundant and of little value to review this text chapter by chapter. For matters of brevity, it can be stated that each anatomical area of the human body is considered separately, the text is easy to manipulate. Excellent example material is available for comparison purposes. Stress is continually laid upon conservative management. On the other hand the use of various and sundry methods of open surgical management are described most adequately and in most cases in a fair and reasonable fashion. As a ready reference to any student of fracture surgery, this book has a great deal of value and this current and Seventh Edition of the volume reflects a continuing effort to improve the text and to make it more valuable in the years to come. I would consider this current and present edition as a very distinct improvement over the previous editions of the book and feel that it will continue to fulfill a very real place in the literature of fractures and their management.

Francis J. Cox, M.D.

MENTAL RETARDATION—Proceedings of the First International Medical Conference at Portland, Maine—Edited by Peter W. Bowman, M.D., Superintendent and Director of Research, and Hans V. Mautner, M.D., Clinical Director Emeritus, both of Pineland Hospital and Training Center, Pownal, Maine. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 530 pages, $12.50.

The book is a report of the proceedings of the First International Medical Conference on Mental Retardation which was held in 1959 in Portland, Maine. Included are contributions of eminent scientists from many countries on a wide variety of subjects related to mental retardation. Clinical as well as experimental material is printed with a plea for medicine to assume its role of responsible and effective leadership in dealing with the problems of mental retardation.

There is an excellent review by Hsia of types of mental deficiency that are associated with enzyme disorders, a discussion of the various types and causes of cerebrospinal birth injuries by Schwartz, and a report of metabolic studies on the perinatal human brain by Himwich, et al., which will interest the clinician. Knobloch and Pasamanick report their findings of a study of the relationship between complications of pregnancy and mental deficiency and there are interesting presentations on the role of infections in the mother during pregnancy, on metabolism, on the chemical basis and dietary treatment of phenylketonuria, on genetic factors, on mongolism, on kernicterus and on childhood schizophrenia.

This volume is one of the most comprehensive reviews of the multi-disciplinary approach to the problem of mental retardation and is highly recommended to physicians and other scientists who are involved in research or practice in this area.

Norman Q. Brill, M.D.

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PROGRESS IN PSYCHOTHERAPY—Volume IV, Social Psychotherapy—Edited by Jules H. Masserman, M.D., Professor of Neurology and Psychiatry, Northwestern University, Chicago; and J. L. Moreno, M.D., New York University, New York City; Director, Institute of Psychodrama and Group Psychotherapy, Beacon, New York. Grune & Stratton, 1959. 361 pages, $8.75.

This book is an Annual Review which consists of a series of articles on "Social Psychotherapy" by a variety of authors with widely varying backgrounds. J. L. Moreno, known for his work in Psychodrama, describes his observations of psychiatry in parts of Europe and the Near East and discusses cultural factors which have some relationship to mental health. In an article entitled "The Semantics of Psychotherapy," Dr. Henry A. Davidson discusses current confusion about the definition of mental illness and of psychotherapy. He deals with the problem of who should do psychotherapy but doesn't suggest a solution.

How a patient is induced in psychotherapy to voluntarily change his usual modes of behavior is described by Dr. J. Haley and the phenomenon of the transference cure explained by Drs. L. C. Kolb and J. Montgomery. In describing the difficulties that are inherent in teaching the principle of psychotherapy, Branch and Ely emphasize the importance of "The development in the trainee of sufficient personal security to facilitate a helpful relationship to the patient and sufficient sophistication to promote adequate communication." They suggest that "these goals can be achieved if the staff has broad clinical experience, can provide a broad spectrum of psychodynamic theory, and insists that the trainee is confronted by a range of patient material beginning with persons culturally similar to himself and extending from this beginning to as wide a cultural range as possible." R. Waggoner deals with the obligations the psychiatrist has to the patient and the importance of flexibility of approach. J. Ruesch in a brief article entitled "Semantics, Transference, Teaching, and Integration" takes the interesting position that there are no startling differences between the various types of psychotherapy. He feels that the diagnosis or the method used bears less upon the outcome of treatment than the personal skill of the doctor. Different therapists feel comfortable with different methods and both may achieve the same results.

Interesting and thought provoking articles are included on the importance of economic and cultural factors in the psychiatric treatment process, as well as on rehabilitation, psychodrama, pastoral-psychiatric workshops, use of the creative dance, and the nature of psychotherapy in a host of countries throughout the world.

This volume will be of interest to physicians who utilize psychotherapy in their practices. The critical analyses of the many factors that are involved highlight the complexity of the technique and raise some important philosophical problems.

Norman Q. Brill, M.D.

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BELOVED PROFESSOR—Life and Times of William Dodge Frost—Russell E. Frost. Vantage Press, Inc., 120 W. 31st Street, New York 1, N. Y., 1961. 350 pages, $3.75.

This biography of William Dodge Frost, one of the pioneer bacteriologists in this country, was compiled by his son. Originally trained in botany, Dr. Frost entered the field of bacteriology and public health when the depression of the 1890's sealed him off from his chosen work. But he took to his new career with vigor and managed, during his long subsequent life, to contribute to many facets of teaching, bacteriologic research, and public health advances. In the last area he was one of the founders of the Wisconsin Anti-tuberculosis Association, and in the latter part of his life, founded the Morningside Sanitorium in Wisconsin.

Dr. Frost's life was an exemplary one, suited to the interests and needs of his times. This description of it possesses much more the ingredient of filial devotion than of literary merit, but it reads easily and presents a fair picture of aspects of the early days of bacteriology in this country.

Sidney Raffel, M.D.

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HUMAN TOXOPLASMOSIS—Proceedings of the Conference on Clinical Aspects and Diagnostic Problems of Toxoplasmosis in Paediatrics at the VIII International Congress of Paediatrics, Copenhagen, 1956; Revised and edited 1959. Edited by J. Chr. Siim, M.D., Director, The Toxoplasmosis Department, State Serum Institute, Copenhagen, Denmark. The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 220 pages, $12.50.

In 1956 a special conference was devoted to the clinical and diagnostic aspects of toxoplasmosis in childhood. Representatives from 12 countries attended this conference, which was organized by Dr. Siim. The papers presented have been revised and brought up to date and appear in this volume. They are organized into sections on Congenital Toxoplasmosis, Acquired Toxoplasmois, Treatment, Ophthalmological Aspects, Epidemiological Aspects and Laboratory Diagnosis. Of the 23 papers summarized all, but one, are in English—the one exception is in French.

This collection will be of interest to those making a special study of this disease. It is not broad enough in its coverage to meet the requirements of the one seeking a general discussion or review of Toxoplasmosis. It effectively points up how little is known of a definitive nature concerning this disease and how much remains to be learned about it.

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(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor; (PE)—Page End; (MJ)—Medical Jurisprudence.

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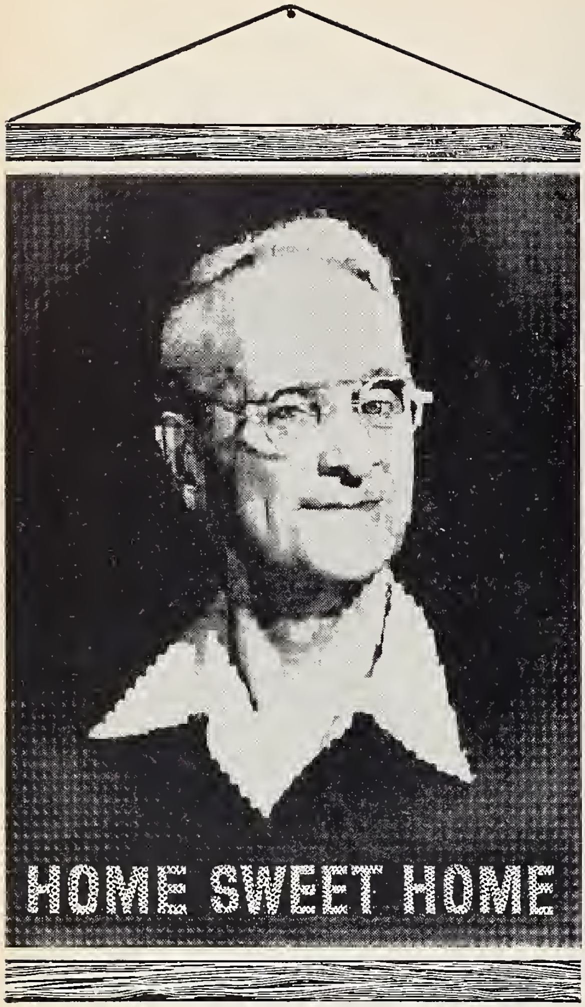
Kestler reports in J.A.M.A. (April 30, 1960) that conventionally treated low-back syndrome patients required an average of 41 days for full recovery (range: 3 to 90 days). The addition of Soma therapy in this comparative investigation reduced the average to 11.5 days (range: 2 to 21 days). With Soma, patients averaged full recovery 30 days sooner.



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New, Killed Poliovirus Vaccine 98 Per Cent Effective

A new, purified and concentrated killed poliovirus vaccine has proved 98 per cent effective in a group of 53 children, mostly infants, it was reported recently in the (May 6) *Journal of the American Medical Association*

The study indicates that the new vaccine (Purivax) can provide satisfactory immunity against all three poliovirus types in over 90 per cent of persons with two injections given one month apart, the report said.

The Salk vaccine given to a control group of 41 children of comparable age produced immunity in 76 per cent.

The study was reported by Drs. Carl Weihl, Cincinnati; David Cornfeld, Philadelphia; Harris D. Riley, Oklahoma City; Nancy Huang, Philadelphia, and Henry Cramblett, Winston-Salem, N. C.

The new vaccine appears to fill the important public health need for an agent which will consistently, rapidly, and safely immunize nearly all recipients against all three poliovirus types, the authors said.

Although the presently available Salk polio vaccine has a high level of effectiveness, they said, the problem of controlling polio is "unfinished business." There still remains much room, not only for improving the utilization of the vaccine, but also for improving the efficacy of the vaccine itself, moving toward an ideal of 100 per cent efficacy, they said.

The new vaccine was developed by Merck Sharp & Dohme, West Point, Pa.

Radioactive Iodine Beneficial For Thyroid-Heart Patients

Radioactive iodine has produced "striking improvement" in persons with hyperthyroidism and some forms of heart disease, it was reported recently.

A study of 356 thyrocardiac patients was reported in the (April 29) *Journal of the American Medical Association.*

Hyperthyroidism is the condition resulting from an overactive thyroid gland which produces an excess of thyroid hormone.

The best result was obtained in hyperthyroid patients suffering a convulsive heart beat (atrial fibrillation), the article said. Of 81 such patents, all but one showed improvement of the heart ailment when the thyroid condition was controlled —a rate of 99 per cent.

Improvement was shown in 85 per cent of the hyperthyroid patients with congestive heart failure, 93 per cent of those with angina pectoris, and 96 per cent of those suffering both angina and heart

(Continued on Page 70)

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Radiation Can Replace Surgery For Some Ulcer Patients

The substitution of radiation therapy for surgery in patients with complicated duodenal ulcer has produced encouraging results, it was reported recently.

Drs. Harold C. Klein and Norman E. Berman, Cleveland, said 39 of 50 patients treated with radiation were "cured" of their ulcer disease. Of the remaining patients, they said, five were able to avoid surgery while six were not benefited and underwent operations.

A duodenal ulcer is one located in that part of the small intestine nearest the stomach, called the duodenum, a frequent site of ulcers. When a duodenal ulcer becomes complicated by hemorrhage, perforation, or other factors, surgery generally is indicated.

Following radiation treatment, no diet restrictions were imposed or medication given, the two physicians said in reporting their findings in the *Journal of the American Medical Association.*

Patients were given 10 to 14 treatments. Their condition was checked for periods up to eight years following the therapy.

"Complications arising from the radiation were minor and infrequent," they said.

Radiation offers the possibility of a better and safer method of treating the complicated ulcer despite the many refinements that have been made in surgical management, they concluded.

The authors are associated with the departments of medicine and radiology, Mount Sinai Hospital.

THE CARE OF FRACTURES IN THE PATIENT WITH MULTIPLE INJURIES—E. L. Compere. J. Int. Coll. Surg.—Vol. 35:216 (Feb.) 1961

The author discusses the immediate and the delayed treatment of fractures, pointing out that definitive reduction of fractures in patients who have other major injuries and who may have been in shock should be delayed until the general condition of the patient is satisfactory. First aid and emergency measures are outlined. Patients who have only minor injuries aside from a fracture or fractures may have suffered shock, which makes definitive treatment at that time unwise. Fracture of a major bone, such as the hip of an elderly patient, will be attended by varying degrees of shock. It is advisable, in most instances, to delay the reduction and internal fixation of such fractures until after the patient's condition has been appraised from a medical standpoint. Any operation can be performed with greater safety when it has been placed on the regular hospital operating schedule.

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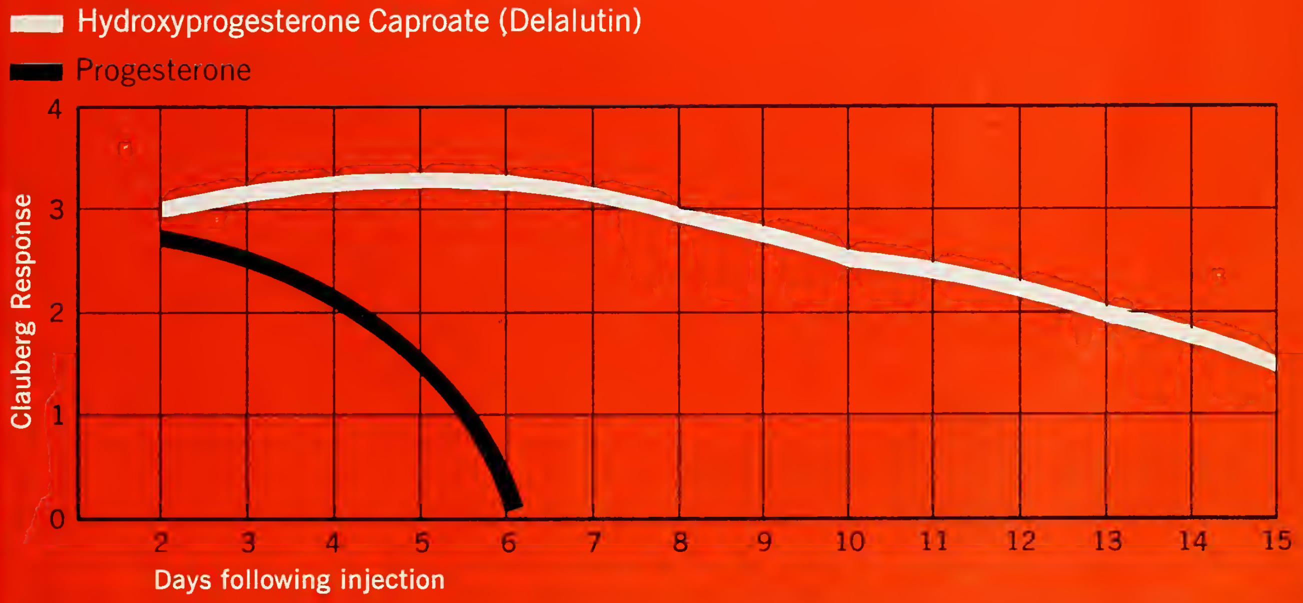
Borman, A.: Laboratory Report on the Duration of Action of 17-Alpha-Hydroxy-progesterone-n-Caproate (Delalutin). The Squibb Institute for Medical Research, May 17, 1955.



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Breathing Trick May Be Factor in Drownings

A breathing trick used by underwater swimmers recently was termed a possible cause of drownings and near drownings.

The swimmer's practice of deep breathing before his breath holding and exercise under water may delay the sensation of the urge to breathe, according to Dr. Albert B. Craig Jr., Rochester, N. Y.

Writing in the (April 29) *Journal of the American Medical Association*, he said, "Prolonged or severe hyperventilation certainly compromises the built-in safety factors which tell the swimmer to surface."

Dr. Craig described eight cases of near drownings and five drownings caused by apparent loss of consciousness under water which could have been precipitated by the deep breathing trick. He said this type of hyperventilation "should be discouraged as a preliminary to swimming under water."

Most underwater swimmers have learned that taking a series of deep breaths will increase their breath-holding time, Dr. Craig said.

This is because deep breathing decreases the carbon dioxide pressure in the blood. It is an increase in this pressure which creates the irresistible urge to breath again, he explained.

During the first few seconds of exercise, more oxygen is used up by the body, he said, and oxygen may decrease to a degree that will affect the function of the brain before the carbon dioxide pressure becomes unbearable.

Furthermore, he said, exercise appears to increase a person's tolerance to increasing carbon dioxide pressure. This increases the likelihood of an oxygen deficiency developing, he said, and one characteristic of this state is that loss of consciousness occurs with little specific warning.

"This chain of events is presented as an example of one way in which people may drown," Dr. Craig said.

The author noted that in all the cases reported, the victims were considered good swimmers and experienced at underwater swimming. The eight survivors all had hyperventilated before submerging, he said. Seven of them had a goal in mind or were competing with others, he said.

While the swimmer usually noted the urge to breathe, he had little or no warning that he was going to pass out, Dr. Craig said. In some cases, he added, the swimmer continued to make coordinated movements after losing consciousness.

"From the point of view of those who are either directly or indirectly responsible for safety in a swimming program, it is worth remembering that not only competition with others but competition of the swimmer with himself seems to be an important contributing factor in this series of incidents," Dr. Craig said.

However, under the proper conditions the risks involved in underwater swimming probably are very small, he added, and the ability to swim under water may be as useful as swimming on the surface in certain types of boat and car accidents.

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Radioactive Iodine Beneficial For Thyroid-Heart Patients

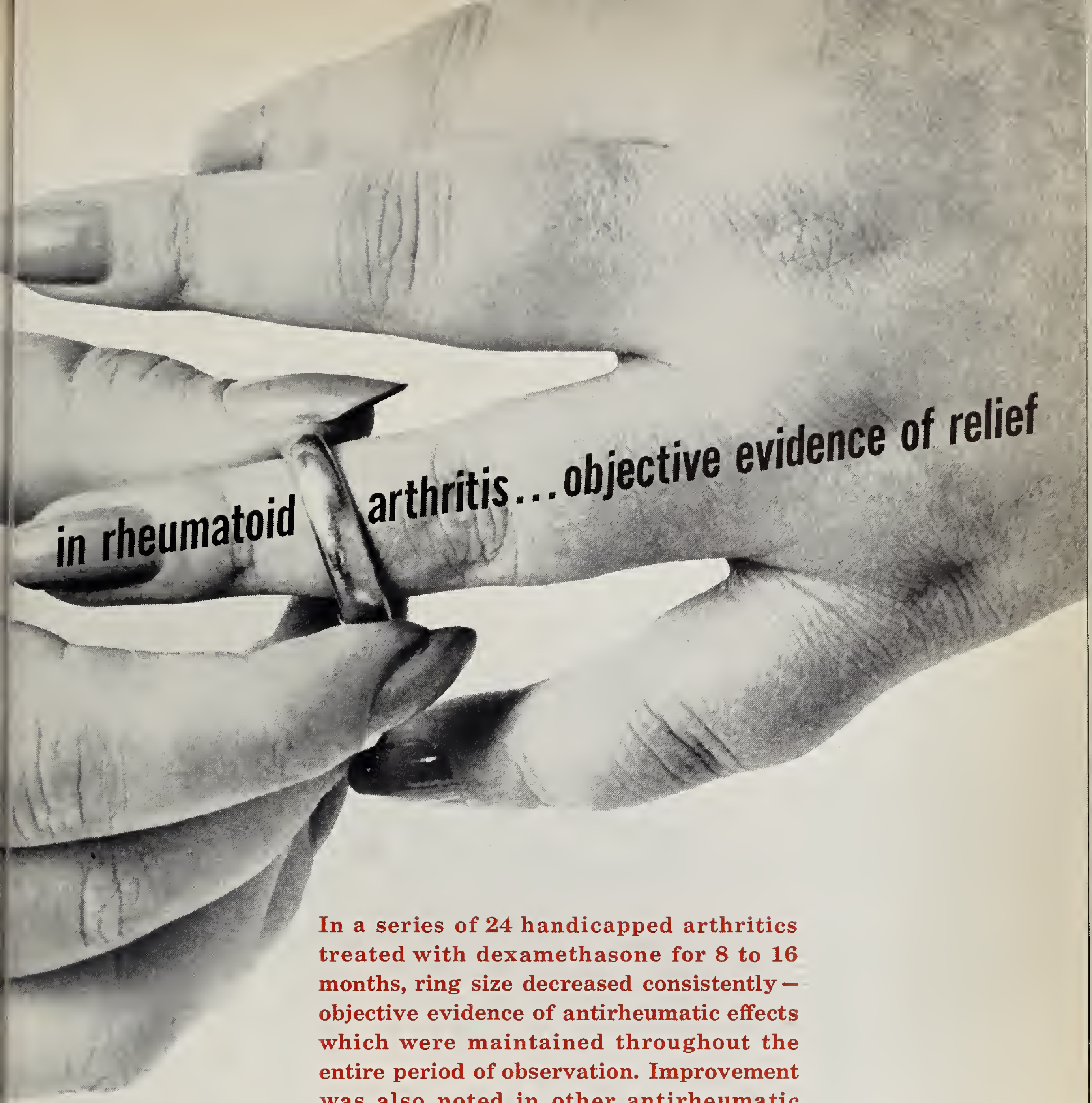
(Continued from Page 56)

failure, the article said. The latter were considered improved if either disorder was benefited.

The patients' treatment consisted of only radioactive iodine, the article said. Although the average dose for the thyrocardiac patients was greater than for hyperthyroid patients, it said, a significant number of thyrocardiac patients were controlled with relatively small doses. Each was treated until the hyperthyroid state was completely controlled.

The beneficial effects of the control of the hyperthyroid state on the symptoms of thyrocardiac disease can be attained by the control of the thyroid disease with surgery, antithyroid drugs, or radioactive iodine, the article said. However, one major advantage of radioactive iodine therapy is the low recurrence rate, which was less than one per cent in this series, it said.

The findings were reported by Drs. Clement Delit, Solomon Silver, Stephen B. Yohalem, and Robert L. Segal, Mount Sinai Hospital, New York City.



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Anticoagulant Therapy Assessed In Heart Patients

Evidence supporting uninterrupted use of anticoagulants in treating heart patients was reported in the (April 22) *Journal of the American Medical Association.*

The rate of recurrent blood clots in patients with heart disease was significantly lower during continuous anticoagulant therapy than it was after discontinuance of therapy, according to a study by Drs. A. B. Thomes, R. W. Scallen, and I. R. Savage, Minneapolis.

An estimated 803 of every 1,000 patients on continuous anticoagulant therapy would escape a recurrent blood clot during the first five years of treatment, the authors said.

When therapy is discontinued, they said, the rate would drop to an estimated 365 per 1,000 patients during the five-year period following discontinuance.

These findings "strongly favor permanent therapy," they said.

The study also indicated a favorable survival rate among patients on continuous anticoagulant therapy, the authors reported.

At the end of five years of continuous treatment, an estimated 736 per 1,000 patients would be alive, they said, but five years after the discontinuance of therapy the survival estimate would drop to 672 per 1,000.

Excluding patients with diabetes and heart failure, they said, the five-year survival rate of those continuously treated was estimated at 912 per 1,000 patients.

Live Polio Vaccine Results Reported from Russia

Community-wide immunization programs with the Sabin live poliovirus vaccine in the Soviet Union last year prevented the traditional summer increase in the disease, a preliminary report said recently.

The same report also gave proof of "high immunologic effectiveness" of three injections of the killed poliovirus Salk vaccine.

However, it pointed out that Salk immunization programs did not prevent a seasonal increase in the disease "as it was practically impossible to vaccinate 100 per cent of susceptibles with Salk vaccine for a number of reasons."

The Russian findings are contained in an article by Dr. Albert B. Sabin, Cincinnati, developer of the vaccine bearing his name, in the (April 22) *Journal of the American Medical Association.*

In a brief report sent to Dr. Sabin, Professor M. P. Chumakov, director of the Moscow Institute for Poliomyelitis Research, said Sabin vaccine was administered in 1960, mostly in candy form,

(Continued on Page 78)

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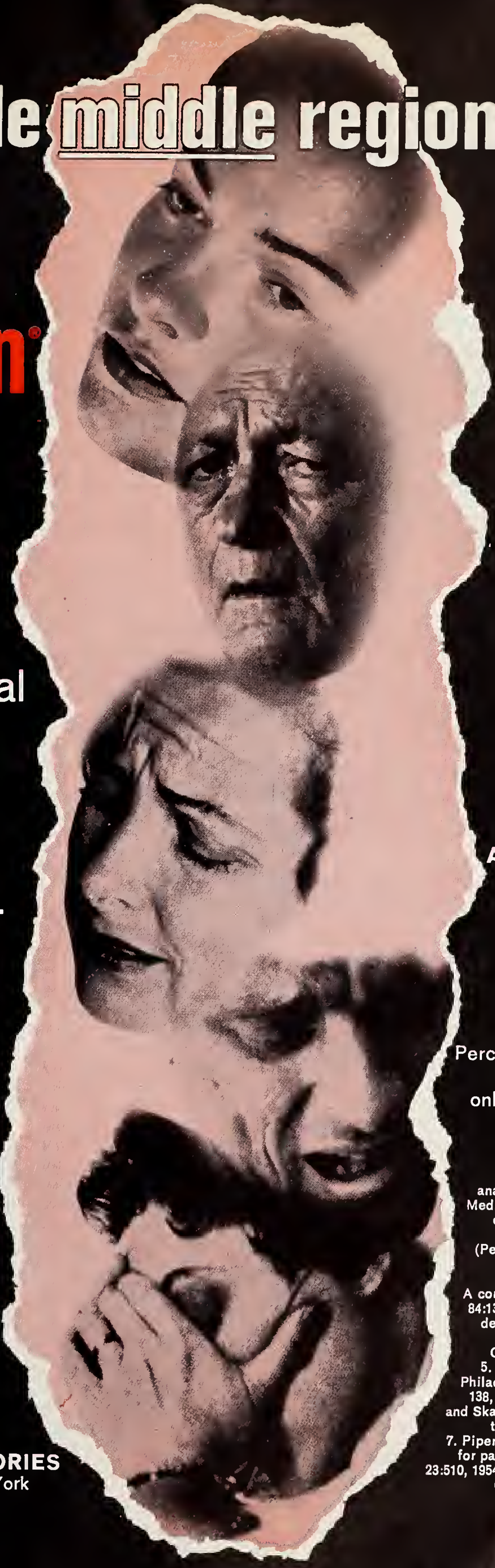

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1. Blank, P., and Boas, H.: Improved analgesia for moderate pain, Ann. West. Med. & Surg. 6:376, 1952. 2. Bonica, J. J., et al.: The management of postpartum pain with dihydrohydroxycodeinone (Percodan): Evaluation with codeine and placebo, West. J. Surg. 65:84, 1957. 3. Cass, L. J., and Frederick, W. S.: A controlled study in pain relief, M. Times 84:1318, 1956. 4. Chasko, W. J.: Pain-free dental surgery: Postoperative extension of the pain-free state, J. District of Columbia Dent. Soc. 31:3, No. 5, 1956. 5. Cozen, L.: Office Orthopedics, ed. 2, Philadelphia, Lea & Febiger, 1953, pp. 120, 138, 145, 156, 234. 6. Nicolson, W. P., Jr., and Skandalakis, J. E.: Control of postoperative pain, J.M.A. Georgia 46:471, 1957. 7. Piper, C. E., and Nicklas, F. W.: Percodan for pain in industrial practice, Indust. Med. 23:510, 1954; abstracted, Clin. Med. 3:1008, 1956, Current M. Digest 22:135, No. 3, 1955.

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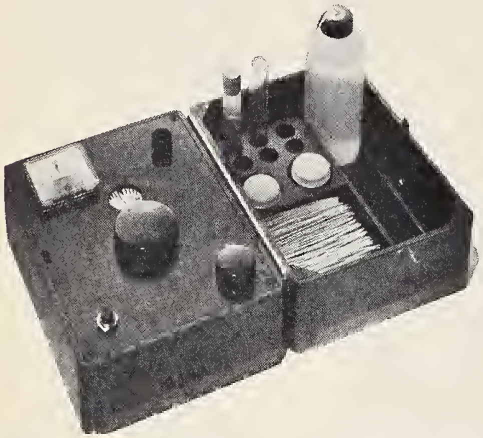

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Live Polio Vaccine Results Reported from Russia

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throughout the whole of Russia except in three regions where only Salk vaccine was used.

Some 77,475,000 persons were vaccinated with the Sabin vaccine, of whom about 72,231,000 were under 21 years of age. The mass inoculation of the population from 2 months to 20 years of age with the live vaccine usually was accomplished in one to seven days and most of the population was inoculated before July 1.

The orally-administered vaccine was "very well accepted," Chumakov said, and no complications or adverse reactions were noted.

Plans for 1961 call for the mass revaccination of the Russian population ranging in age from two months to 20 years with the Sabin vaccine, the Soviet researcher said.

Dr. Sabin said that carefuly studies conducted in Cincinnati, Czechoslovakia, and Hungary showed that "the community-wide use of oral poliomyelitis vaccine resulted in the complete elimination of *confirmed* cases of poliomyelitis."

Results obtained in Cincinnati in 1960, he said, show that under the conditions prevailing in the United States there is no need for revaccination such as is planned in Russia this year.

Dr. Sabin said Chumakov indicated that his recommendation for revaccination in Russia was based on the desire to do even more than may be necessary to achieve complete eradication of polio.

METASTATIC CARCINOMA INVOLVING THE PARATHYROID GLANDS—A. Drickman. Arch. Surg.—Vol. 82:576 (April) 1961

Two cases of rectal carcinoma, metastatic to parathyroid, were presented. Only nine previous cases of carcinoma metastatic to parathyroid glands have been reported. The sites of the primary tumor in these cases were lung, breast, esophagus, and thyroid. Two of the 11 patients had clinical evidence of parathyroid dysfunction. Some authors have stated that metastatic carcinoma not infrequently involves parathyroid tissue, but only when more attention is given to the examination of parathyroid glands will the frequency and clinical importance of metastases to parathyroid tissue be determined.

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